SOCIOMETRY

A Journal of Inter-Personal Relations

A QUARTERLY

CONTENTS

EDITORIAL NOTE

We are greatly indebted to Dr. Ralph B. Spence, the Editor of this issue for his careful reading and arrangement of the material.

The fourteenth volume of SOCIOMETRY starts with the next issue. It will introduce a reorientation of policy, in order to encourage the productivity of new talent in the fields of experimental sociometry and sociology.

THE RELATIONSHIP BETWEEN CHOICE STATUS AND ECONOMIC STATUS IN SOCIAL SYSTEMS

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In considering the problem at hand we have decided to state the following hypotheses which appear to be of considerable importance for students of social organization:

(1) In an open class society, other things being equal, incomes of individuals for services rendered to a given social system are positively correlated with the acceptability or choice statuses of the individuals in the group composing the social system involved.

(2) Individual and group morale in a social system will be higher the higher the correlation between individuals' incomes for services to the system and the choice status of the individuals as determined by members of the system, other things being equal.

Of course, the restriction "other things being equal" deprives these hypotheses of much of their immediate applicability. Thus, rare ability to function in a particular position or to play a special role may, regardless of other factors such as congeniality and sensitivity to others, be of lesser importance in determining his income.[1] Also the hypotheses do not specify the criteria to be used in developing the choice status.[2] Criteria based on the appraisal by members of productivity in achieving the goals of the social system would, we believe, be more pertinent for the hypotheses than those reflecting congeniality or similar attributes.[3]

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[1] The point has been made that the more structured or institutionalized the system has become the more factors other than congeniality may be valued. Thus rare ability to play special roles may be of lesser importance in clique or other informal groupings than in more formal systems such as athletic teams. C. P. Loomis and H. B. Pepinsky, "Sociometry, 1937-1947: Theory and Methods," SOCIOMETRY, 11:3. (Aug. 1948) pp. 272-3.

[2] Thus Helen Jennings has demonstrated the difference between what she calls psychegroup and sociogroup relations. The latter is collective and impersonal as when individuals are chosen for working partners or teams, and the former is private and personal as when one chooses an associate for recreational or congeniality activities. See Helen H. Jennings, *Leadership and Isolation*, New York: Longmans, Green, 1950. See also her "Sociometric Differentiation of the Psychegroup and the Sociogroup." SOCIOMETRY, 10:1 (1947) pp. 71-79.

[3] See Bobbie Norfleet, "Interpersonal Relations and Group Productivity," *The*

In the analysis which follows our data will not permit us to do more than to throw some light on the first hypothesis and suggest an approach to the second. Many of the weaknesses of the data at hand result from their having been gathered as a part of an action program. The sociometric or choice status data were gathered for the purpose of dividing two groups; namely, the Michigan Agricultural Agents and the Michigan County Library Section of the Michigan Library Association, into small work groups or teams for conference workshops. Economic data to be related to these choice status data were gathered later.

THE SOCIAL SYSTEMS BEING CONSIDERED

The social systems under consideration are: (1) The agricultural county agents of Michigan. They constitute a system directed for the most part by the State Extension Service and Michigan State College officials in East Lansing. Each of the agents resides in and serves the farmers of a separate county. The county officials and people of the county are consulted in the employment of the agent but his salary comes from federal and state sources, county contributions going to other non-salary expenses, such as office maintenance. Salary raises are determined for the most part by the state officials who supposedly take into consideration among other criteria the extent to which his work is satisfactory on the local level. (2) The County Library Section of the Michigan Library Association. This group is composed of two sub-systems. There are eight librarians who are employed by the Michigan State Library and whose salaries are determined and work directed by the State Library officials. Since their work is that of assisting and in some ways supervising the county librarians, they are in constant touch with the larger group. The remainder of the group, the county librarians and their assistants, are employed by the various counties. They are responsible to county trustees, appointed by the county boards of supervisors, and their salaries are determined by these boards.

The county agricultural agent's social system is more centralized than

that of the county librarians. The processes which determine individual salaries are more like those of the eight librarians who are employed by the State Library. In so far as the eight State Library employees may be considered supervisors the whole group of librarians included in the study constituted a different type of system than that of the county agents, since no supervisors were included among the county agents.

SOCIOMETRIC DATA USED IN CHOICE STATUS INDICES

The data used in the analysis were gathered in the following manner: Each group planned a separate conference workshop in which the Department of Sociology and Anthropology of Michigan State College was requested to demonstrate the various uses of sociology and anthropology to the two respective groups.[4] The county agricultural agents were each mailed a list of county agents by the County Agent leader at the College. The list was accompanied by a letter explaining the nature of the conference and indicating that it would be organized around small discussion groups of ten or twelve agents. The letter requested that the agent receiving it indicate, in the order of preference, the ten agents he would like to have in his group. The agents were requested to choose agents whom they thought would make their groups as productive and congenial as possible. The data thus gathered were used to divide the agents into six groups which met throughout the rest of the workshop.

The choice data used for the analysis of the librarians were gathered at the first meeting of this workshop. Each librarian was given a slip of paper with five blanks on it, with the instruction: "List in the order of preference the librarians at this workshop which you would like to have on your work team to discuss and formulate library objectives." The data gathered from these slips were used to divide the librarians into four work groups. For both groups the choice status score for each individual was determined by counting the number of choices received.

OTHER DATA GATHERED

We were able to obtain data on salaries for the year 1946-47, the year of the conference, and the year 1949-50, for 71 county agents. Also data on length of service of the agent and his age were gathered. Although choice data were available for 81 agents the other data were available for only 71. We were able to collect data on salaries for 1946-47, the year

[4] Charles P. Loomis, "Demonstration of Rural Sociology and Anthropology—A Case Report," *Applied Anthropology*, 6:1 (1947) pp. 10-17.

of the conference for 27 librarians, and for the year 1948-49 for 17 of the librarians. Several of the librarians had left the state or changed their positions between the first and second year for which salaries were studied. The salary distributions of the county agents and the librarians are presented in Table 1: Association between choice status and salaries.

TABLE 1

FREQUENCY DISTRIBUTION SHOWING NUMBER OF COUNTY AGENTS AND NUMBER OF LIBRARIANS RECEIVING GIVEN YEARLY SALARIES

Yearly Salary	County Agents		Librarians	
	No.	%	No.	%
500- 999	—		2	7.4
1000-1499	—		2	7.4
1500-1999	1	1.3	5	18.5
2000-2499	—		7	25.9
2500-2999	1	1.3	3	11.1
3000-3499	23	29.5	8	29.6
3500-3999	29	37.2		
4000-4499	21	26.9		
4500-	3	3.8		
Totals	78	100.0	27	99.9

The first hypothesis tested was the hypothesis of a linear function between salary and choice status as determined by the data available. This hypothesis was tested by computing a product moment r between the two variables for both groups. Also correlation ratios and Spearman rank correlation coefficients were computed for the same data. These are presented in Table 2. Elsewhere in this paper only product moment coefficients are computed to measure association unless otherwise specified.

TABLE 2

ASSOCIATION BETWEEN CHOICE STATUS AND INCOME OF COUNTY AGENTS AND LIBRARIANS OF THE COUNTY LIBRARY SECTION OF THE MICHIGAN LIBRARY ASSOCIATION, 1946-47

	By Product Moment r	By Correlation Ratio: Salary on Choice Status	By Spearman R
County Agents	.28[1]	.19	.30
Librarians	.53[2]	.55	.63

1. With an r of this size the rejection of the null hypothesis will be in error 1 time out of 100.
2. With an r of this size the rejection of the null hypothesis will be in error only 1 time out of 250.

These coefficients support our first hypothesis, but there are, no doubt, many sub-factors covered up within the variables used. Thus, when the income and choice status data for the librarians are plotted with the one variable on each axis (as customary in correlation analysis) it becomes obvious that although the choice status of the eight librarians employed by the Michigan State Library is about the average of the whole group and average salary is higher, when the eight are eliminated from the computation the product moment r becomes .63 instead of .53 as in Table 2. Although these eight librarians attend meetings of the County Library Section of the Michigan Library Association and although they work together in workshops and on their jobs, the different source of incomes and direction, as mentioned previously, makes them a sub-system.

CORRELATION BETWEEN CHOICE STATUS AND INCREASE AFTER THE YEAR 1946-47

For both of the groups it was possible to secure data on the increase in salary over a three year period following the time at which data for the choice status scores were gathered. Such data should permit testing the hypothesis that choice status scores, such as those available to us, could be used in predicting increases. For the county agents, salary increases and choice status scores when correlated yielded a product moment coefficient of .15; for the librarians the comparable score was .37. Neither of these coefficients is strong, but when original salary is partialed out statistically, a substantial increase results for the agents. The coefficient expressing this relationship for the county agents is .71; for the librarians, .17. A general knowledge of the situation, taken with the coefficients indicates that in the past various institutional factors, such as seniority, have made couny agents salaries less closely related to choice status; but for the last few years salary increases for younger men with higher status scores have been relatively greater.

LENGTH OF SERVICE AND AGE AS RELATED TO SALARIES AND CHOICE STATUS

These data are only available for the county agents. From the beginning we suspected that seniority or the length of service in the Michigan Agricultural Extension Service was closely related to salaries. The product moment coefficient expressing this relationship was .60. The years of service when correlated with the choice status scores produced a coefficient of .26. Thus length of service seems to be related to both the salary and choice status

variables included in Table 2. Interestingly enough, age of the agent was not closely related to choice status, the coefficient expressing this relationship being .08. Age was closely correlated to years of service $(r = .76)$ and salary $(r = .63)$.

TYPE OF CHOICE DATA AS RELATED TO OTHER FACTORS

The question arose as to whether a choice status score other than the total number of choices received would be more closely related to the various factors used in the study. The number of mutual choices received by each individual county agent when correlated with salary yielded a coefficient of .25, with years of service, .21, and with total number of choices received, .73. We have no proof from these results that mutual choices would, as an index of choice status, be more closely related to salaries than total number of choices.

Incidentally, if the relative number of mutual choices made by a group may be taken as an index of "integration" and "morale," we may compare the two groups under consideration. This dubious assumption may be tested by applying a chi-square test to the expected frequencies of "mutual" and "non-mutual" pairs.[5] For county agents $x^2 = 30.72$ (number of mutual pairs = 90), and for the librarians $x^2 = 15.72$ (number of mutual pairs = 20), with both x^2's having one degree of freedom. Thus, we can *roughly* conclude that county agents manifest "higher" morale and "greater" integration than the librarians.

Unfortunately, the data available do not permit us to test the second hypothesis stated at the first of the article. We do not have acceptable measures of morale. Neither can we be sure for which group choice status was most closely related to salaries. In this respect the librarians manifested the highest relationship for salary at the time of the study; on the other hand, for salary increase (holding base salary constant) the county agents manifested the highest relationship. Since we cannot test the second hypothesis the data are presented in the hope that they will be suggestive for future studies.

In addition to testing the mutual choices as possible indices of choice

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[5] This test rests on the fact that the probability of any given pair of individuals engaging in a mutual choice equals $(d/N—1)^2$, of not engaging in a mutual equals $1 — (d/N—1)^2$. The expected frequencies are arrived at by multiplying both probabilities by $N(N—1)/2$, or the number of possible pairs which can be formed among N individuals. The observed numbers of mutual and non-mutual pairs can then be tested against these expected frequencies in the traditional manner.

status, the relative merits of first choices were considered. The percentage of all the choices which each county agent received which were first choices was correlated with salaries, yielding a coefficient of .00. The same variable when correlated with length of service also yielded a coefficient of .00.

SUMMARY AND CONCLUSIONS

Choice status data obtained from conferences of Michigan county agricultural agents and the members of the County Library Section of the Michigan Library Association were correlated with salary and other data to test the hypothesis that salaries and increases in salaries tend to be related to choice status scores. Due to the nature of the choice status scores and the lack of other data which might be used to test this and other hypotheses we can only claim that the hypothesis tends in general to be supported. Choice status data based upon appraisals of productivity and other criteria must be tested before the hypotheses advanced can be tested. More acceptable data on morale must be collected before the hypothesis that the higher the correlation is between choice status and salary, the higher will be the morale of a group and its members.

ADAPTATION OF RESEARCH FINDINGS IN SOCIAL LEADERSHIP TO COLLEGE CLASSROOM PROCEDURES

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This account of a procedure for developing social leadership in the college classroom is based upon some recent research findings in social leadership;[1] the procedure was tried out in a social psychology class composed of thirty-two advanced undergraduate and graduate students.

Instruction in Social Leadership. During the first few days of the course, lectures on social leadership emphasized the importance of group participation which, as Jennings'[2] research shows, would give "psychological satisfaction" to associates; also it was explained that possession of *specific knowledge* of the problems before a particular group, *vitality, self-confidence,* and *social adaptability* (the ability to give and take) were helpful personality factors in social leadership.[3] Students were fully informed concerning the research that showed leaders could best be identified by the *observation of performance* and by the *judgment of associates*[4] rather than by mere possession of "qualities."

Guided Practice in Leadership. Following instruction in leadership the class was divided into eight groups of four persons each, by means of a free choice of group associates (with the exception of two or three students who enrolled late). Each of these groups, during part of the class time, was charged with the responsibility of reviewing, interpreting, and illustrating (unit by unit) the major "propositions" and research findings in two good books, one a text and one a collection of research reports. Group discussion was followed by general class discussion. In addition, special lectures were given from time to time.

Group discussion provided an opportunity for *practice in leadership* and the discussion of problems in social psychology. Full participation required the use of specialized knowledge in social psychology. In addition one needed vitality, self-confidence, and social adaptability, including the

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[1] Zeleny, Leslie D. "Leadership." *Encyclopedia of Educational Research,* 1950 Edition, pp. 662-667.

[2] Jennings, Helen. *Leadership and Isolation.* See also Moreno, J. L., *Who Shall Survive.*

[3] Zeleny, Leslie D., *op. cit.,* p. 663.

[4] *Ibid.,* pp. 664-665.

ability to present ideas in such a way as to be helpful to others and to give "psychological satisfaction" to them. Students were reminded of the importance of these ways of behaving from time to time, especially during the first few weeks. Thus, both *instruction* and *practice* in leadership were carried on almost simultaneously; Eichler[5] has shown that this is a favorable circumstance for the development of leadership ability.

After five weeks of guided discussion, members of the class were required to form new groups consisting of new members of their own choosing. These newly formed groups continued for about one week before the next step was taken.

It should be mentioned that, during the foregoing periods, the instructor called the roll frequently to assist students in identifying the names of persons who took part in general discussion but who were not in their small discussion groups.

Administration of a Sociometric Exercise. After six weeks of one hour daily contact of minds, the class was invited to consider the possibility of the administration of a sociometric exercise of the kind about which they had received instruction during the first week of the course. They were asked to consider whether or not they would like to receive a report of the degree of success they had attained in leadership as measured by the judgments of their own associates. The consensus of opinion was in favor of the administration of the exercise despite the fact that all realized the results might be a little "hard to take."

The form of "test" used was an adaptation of that used by Maucorps[6] in the French Army, as follows:

A part of your final examination will be a GROUP EXAMINATION. Your success will depend upon how well you and three others can work together. In view of this approaching situation, please indicate those with whom you would like or not like to take the final group examination.

Below is the roll of the students in the class. Note the "Yes" and "No" after each name.

1. Encircle the "Yes" after the names of *the* three persons with whom you would like to take the final group examination.
2. Underline the "Yes" after the names of three other persons with whom you would be quite willing to work if you could not be assigned the first three.

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[5] Eichler, G. A., *Studies in Student Leadership.*

[6] Maucorps, Paul H. "A Sociometric Inquiry in the French Army." SOCIOMETRY, Vol. 12, pp. 46-80.

3. Encircle the "No" after the names of three with whom you would least like to take the group examination.

Names	In Group Examination		Reasons
1. ————————	Yes	No	————————
2. ————————	Yes	No	————————
*	*	*	*
*	*	*	*
*	*	*	*
*	*	*	*
32. ————————	Yes	No	————————

Students were asked orally to indicate, briefly, the reasons for their decisions with respect to each name under the column entitled "Reasons."

The Scoring of the Sociometric Exercise. The encircled "Yes" was assigned a score of $+2$, the underlined "Yes" was scored as a $+1$, and the encircled "No" was counted as a $—2$. In this manner verbal responses were represented by mathematical symbols. By an examination of the papers it was possible to compute the number and intensity of acceptances and the acceptance score (arithmetic sum of values of acceptances); also the number of rejections "received" by each person in the class from others or rejection score (arithmetic sum of negative values). This information is presented in the following matrix.

Examination of the matrix shows a number for each student in the left hand column and above the top row. The response of each student to other students is recorded in the rows to the right of each number (student) in the left hand column. To find the direction and intensity of responses "received by" a student, read down the column under the student's number. At the bottom of the column is shown first, his total "acceptance score" (for student number 1 it is 8) and his total "rejection score" (for student number 1 it is $—2$).

SS represents *social status index*. It is an index of the acceptability of a student by his associates for membership in the group during the group examinations and is computed by taking the algebraic sum of the direction and intensity of the responses "received by" a student and dividing by the number of students in the class, minus one. Thus when I equals the plus or minus intensity of a response and N equals the number of students in the class

$$\text{SS (social status index)} = \frac{\Sigma I}{N-1} \qquad (1)$$

MATRIX I

MATRIX OF A CLASS IN SOCIAL PSYCHOLOGY (AUGUST 4, 1950)

Students who "received" acceptances and rejections

Students who "gave" acceptances and rejections

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1										-2	2	2	2	-2	2					-2							1	1				
2			1		2	2		1				-2		1				2													-2	-2
3										2							2	2		1								1				1
4					1	-2	1	-2	2				2					1							-2		2					
5						2			-2	1		2	-2								-2				1							
6		2		-2		1	-2					1						1	-2		2				2							
7		2	1				2	-2	1					-2			2		1		2				-2							
8		1				1			2				2	2	-2	1	-2				-2											
9		1			2				2	2	-2			1			-2		-2			1		-2								
10				2			2	-2		1				2	-2	1											-2	1				
11	-2	2	-2	2			-2	1	1	1															2							
12	2	-2	2				-2	2	1	1				1					1					-2								
13	2						-2	2	1	1	-2	-2	1	2																		
14		-2	2	1	1	-2						-2		1	2	2						-2	1	2								
15	1	2	-2	1	-2				-2		1	2	2											-2								
16	-2	1	1	1	-2	2	2		-2												2											
17	1		-2	2				2	1	1	-2								2	-2	-2											
18		-2	2	2	-2	1	2					-2	1	1							2	-1										
19	1	-2	2		1		1	2											2	-1												
20	1	1	1	-2	2	-2		2	-2								2	1														
21	-2	2	2	-2	2		1	1	-2																							
22	2	1	-2			1	-2 2	2	1	-2																						
23	2	-2	1	-2		2	2	1			1	-2																				
24				1	2		1		2	1		2																				
25		-2 -2	2	2	-2	1	2		-2		1	1																				
26	2	2	2	-2 1 1	-2	1	-2																						-2			
27	1	2	-2 2	2 1 1	-2																											
28	1 2	1 2	1	-2	2	1	-2	-2	-2																							
29	2	1	2	1	2	1	-2	-2	-2																							
30	2	1	-2 2	1	1	-2	2	-2																								
31	-2	2	1 -2	1	2	2	1	-2																								
32		1	-2	2	-2 2	1	-2	2																								

* 8 17 0 16 9 8 25 6 8 1 30 7 7 15 8 4 14 6 16 11 10 12 6 1 8 1 3 4 21 0 3 4
+ -2 -4 -8 -6 -6 -2 -0 -21 -0 -16 -10 -6 -8 -4 -8 -2 -4 -0 -2 -2 -8 -1 -4 -10 -4 -14 -8 -0 -4 -6 -10 -6
■ .19 .42 -26 .82 .06 .19 .81 -.45 .26 -.49 .16 .23 -.03 .36 .0 .06 .32 .19 .45 .29 .06 .32 .06 -.29 .13 -.42 .16 .13 .55 -.14 -.29 -.06

* Acceptance score. + Rejection score. ■ Social Status Index.

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Take for example student No. 1.

$$SS = \frac{\Sigma I}{N-1} = \frac{8 + (-2)}{31} = .19 \tag{2'}$$

TABLE I

SOCIAL STATUS INDICES OF THIRTY-TWO STUDENTS IN SOCIAL PSYCHOLOGY

SS Indices
```
.81
.65  ←————————— Superior SS Indices
.55                  (Above 1 SD above the mean)
.45  ← +1 SD
.42
.36
.32
.32
.32
.29
.26
.23
.19
.19
.19  ←————————— "Average" SS Indices
.13
.13  ← M = .11
.06
.06
.06
.06
.00
-.03
-.06
-.16
-.19 ← -1 SD
-.23
-.26
-.29 ←————————— Inferior SS Indices
-.42                 (Below 1 SD below the mean)
-.45
-.48
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M = .11
SD = .31
SE_M = .054

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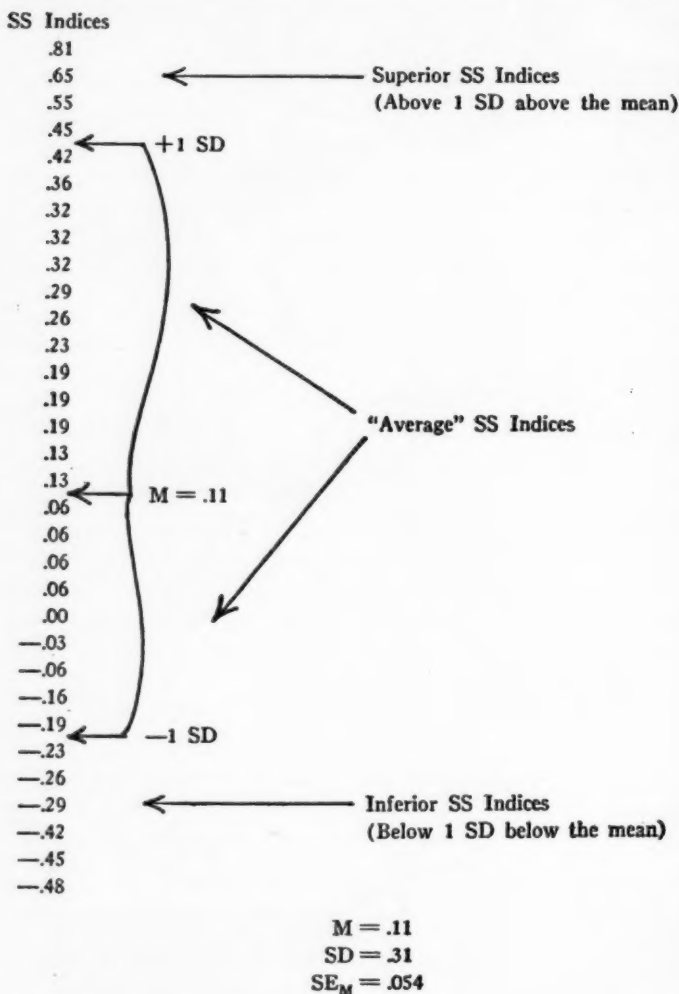
[7] The average or standard deviation of the SS should be computed but is omitted here in the interest of simplicity of statement.

The meaning of the social status index of .19 can be determined, in part, by comparing it with other status indices in the class with the aid of statistics.

An examination of the social status indices shows that they vary a great deal; but none "received" a possible high of $+2$ nor a possible low of -2. Indices actually ranged from a high of $+.81$ to a low of $-.48$. The average SS (social status) index was .11, the SD (standard deviation) .31 and the SE_M (standard error of the mean) was found to be .054. So-called *average* SS indices were considered to be those within the range of ± 1 SD from the mean, or from SS index .42 (inclusive) to SS index $-.20$ (inclusive). See Table I. Indices over $+.42$ were considered superior; and indices under $-.20$ were considered inferior.

The foregoing figures are subject to some variation because the SE_M shows that the "true mean" could range as high as .272 or as low as $-.052$. Nevertheless, the possible variation is not too great to invalidate general results.

Counseling of Students. After the administration and scoring of the sociometric exercise, the class was asked again if it would like the results. The class was eager. Consequently, it was informed of the range of SS indices and the approximate average and was asked to note that no one got too near either the possible high or the possible low score; it was stated, "Hence, no one should feel too elated or too depressed with his own index." Then, while group discussion was in progress, each student was called to the desk privately and informed of his SS index and the reasons given by some of his associates for responding the way they did toward him.

The complete report of SS indices with "reasons" follows. It is presented in full because of the detailed reports of types of behavior acceptable and unacceptable to fellow students. (See Table II.)

The foregoing table may be considered a summary of the ways of behavior acceptable and not acceptable to fellow students in group discussion, at least in this class.

Some Effects of Sociometric Counseling. Questions may be raised with respect to the effect upon students of the foregoing type of counseling. Though this article is an account of a practical procedure (based upon research findings) and not a controlled experiment, a consideration of some of the student responses to the procedure is of interest when considering the value of the procedure. Some days after the class members had received their sociometric reports, they were asked to write anonymous statements with respect to the effect of the sociometric reports on their attitudes and behavior.

TABLE II

THE SOCIAL STATUS INDICES OF THIRTY-TWO STUDENTS IN SOCIAL PSYCHOLOGY WITH
THE REASONS GIVEN BY FELLOW STUDENTS FOR THEIR ACCEPTANCE
OR REJECTION OF FELLOW STUDENTS.

"Acceptance" Reasons	"Rejection" Reasons
(+.81)	(+.81)
Have worked well with him in former group, knows subject matter	None given
A clear thinker	
Well-informed, pleasant to work with	
Well-adjusted, contributes	
Intelligent, good background	
Pleasant, not boisterous	
Experienced in social psychology	
Knowledge of field, decisive	
Good subject matter background	
Has taught social psychology, matter-of-fact	
Mature decision, knowledge	
Seems to be a nice person	
(+.65)	(+.65)
Friendly and well-informed	Too dominant in speech
A studious person	Seems more interested in terminology
Well-informed, pleasing personality	Too quick with his opinions
I was able for a day or so to know him; I enjoyed his beliefs	Prefers his personal ideals, without consideration for others. Domineering.
Always will stop to talk, intelligent, pleasing	
Seems informed	
Much experience	
Good power of association, experience, pleasing, congenial	
Understands what I'm trying to say, patient	
Makes things plain when he explains	
Reasons well	
Appears intelligent, to the point	
(+.55)	(+.55)
Informed, speaks with clearness and decisiveness	Too forceful and dominant, with unchanging ideas
Intelligent, well-adjusted	
Very intelligent, agreeable personality	
Like his way of thinking	
Seems informed	

Seem[...]
gro[...]
Know[...]
nat[...]
Like [...]
Under[...]
Wide [...]
is l[...]
oth[...]

(+.4[...]
Better[...]
Seems[...]
star[...]
In pr[...]
Good [...]
Critic[...]
ant [...]
Intelli[...]
Coope[...]
wha[...]

(+.4[...]
Ease [...]
frie[...]
Good [...]
Appea[...]
Good [...]
info[...]
Seems[...]
Worke[...]
Pleasa[...]
edg[...]
Coope[...]
Very [...]
pan[...]
Pleasa[...]

(+.36[...]
Good [...]
Intelli[...]
In fir[...]
have[...]
Demo[...]
zati[...]
In pr[...]

TABLE II (*continued*)

"Acceptance" Reasons	"Rejection" Reasons
Seems able to reason, and same background	
Knowledge of field, thinker, coordinator	
Like his general background	
Understands text and presents it well	
Wide background, good humor. He is himself. Will listen to opinion of others. Treats you as an individual.	

(+.45)	(+.45)
Better interaction of understandings	Does not have cooperative spirit
Seems to have background for understanding the subject, good rapport	
In present group, knows material	
Good worker and cooperative	
Critical thinker, well-informed, pleasant	
Intelligent, good personality, studies	
Cooperative, pleasant, seems to know what he is talking about	

(+.42)	(+.42)
Ease of tossing ideas back and forth, friendly	Lack of confidence
Good student and quite cooperative	Sat by her and didn't care for her
Appears to be serious-minded	
Good character, moderately well-informed	
Seems to enjoy discussions	
Worked with in first group	
Pleasant personality, thinker, knowledge of subject	
Cooperative, pleasant	
Very pleasant, appeared intelligent in panel	
Pleasant personality	

(+.36)	(+.36)
Good thinking, pleasant	Argues too much
Intelligent, well-adjusted	
In first group and he is likable. We have same thoughts	
Demonstrated leadership and organizational ability	
In present group, knows material	

TABLE II (*continued*)

"Acceptance" Reasons	"Rejection" Reasons
(+.32)	(+.32)
Intelligent, contributes	Too adamant
Not afraid to state her thinking	She seems to have a feeling of su-
Did good job in group report	periority
Good student	
I like her attitude in class	
Precise, alert	
Appears to have abundant amount of common sense. Fairly realistic	
(+.32)	(+.32)
Superior intelligence, well-adjusted	Uncooperative, so sure of himself
Interested, intelligent, agreeable	Seems rather uncooperative
He is in two other classes with me, seems like a nice guy	Appears cocky
Is alert, thinks	
Good powers of association, dynamic	
Good potentiality, alert, more familiar with him	
Understanding of material	
Knows his material, in present group	
(+.32)	(+.32)
Reasons things out well	None given
Pleasant to work with, also offers much to discussion	
Pleasant, good organizer	
Appears intelligent and pleasant	
Intelligent and has practical ideas and concepts. Poise. Socially accepted.	
(+.29)	(+.29)
Appears to be serious-minded	I feel inferior to her
Sincere in discussions	Didn't consider, previously in group
Expresses herself well	
Intelligent comment	
Serious and helpful attitude	
Gives impression of interest and alertness	
(+.26)	(+.26)
Applies problems to practical situations	None given
Cooperative, have worked with him in many other classes	

TABLE II (*continued*)

"Acceptance" Reasons	"Rejection" Reasons
(+.23)	(+.23)
He is kind and intelligent	None given
Well-adjusted, contributes	
States his attitudes and ideas freely	
Appeared intelligent and considerate in panel	
(+.19)	(+.19)
Thinks well	None given
Seems congenial and friendly	
(+.19)	(+.19)
Friendly and thoughtful	Don't like her actions
Brings forth good statements	
Cooperative, pleasant	
Very pleasing personality	
(+.19)	(+.19)
Has background for information, works well with group	Uncertain of himself
Interested, works hard, intelligent	
He was in my first group and I like his personality and his actions	
Seems to know what he is talking about, pleasant	
Practical thinker	
(+.13)	(+.13)
Congenial	None given
Works well in a group, pleasant, co-operative	
(+.13)	(+.13)
Talks well, good-humored	None given
Practical minded	
I knew him in a past group; we seemed to get along very well	
Thinks and discusses well	
He has a good mind with sense of humor	
Nice person, practical knowledge	
(+.06)	(+.06)
Decisive, thinker, progressive	Seems defensive
Seems congenial and friendly	Personality seems to clash with mine
Common sense thinker	Her voice irritates me to a great extent

TABLE II (*continued*)

"Acceptance" Reasons	"Rejection" Reasons
$(+.06)$	$(+.06)$
Shows well-organized thinking and has good rapport	Uninformed, retreating personality
Will give another a chance, has good ideas from experience	Doesn't seem to grasp situation
A clear-headed contributor in group discussion	
$(+.06)$	$(+.06)$
None given	None given
$(+.06)$	$(+.06)$
Good conversationalist	Interests likely would vary
We work well together	Just hasn't registered with me
Seems to be a pleasant person	
Appears intelligent and pleasant	
$(.00)$	$(.00)$
Likable and full of fun	Uninformed, hesitant
Seems to work well with group, has understanding of the problems brought up	Lack of coordinated thoughts on subject matter pleasant to talk with
Swell personality	Seems stupid
Seems to have desire to know all about social psychology	
Pleasing personality, good sense of humor	
Pleasant, cooperative	
$(-.03)$	$(-.03)$
Considerate and thoughtful	Does not seem to give much to group discussion, too quiet for me
	Doesn't seem to have much to offer
$(-.06)$	$(-.06)$
None given	He didn't seem sure of himself in group
	Slow thinking
$(-.16)$	$(-.16)$
None given	Do not know too well
	Lacks confidence
	Too easily upset, evidences of conflicts
$(-.19)$	$(-.19)$
None given	Doesn't seem interested
	Working and consequently cannot give enough time to school work
	Won't cooperate

TABLE II (*continued*)

"Acceptance" Reasons	"Rejection" Reasons
(—.23) Works well, intelligent Has a lot of common sense	(—.23) Not well enough acquainted with him Do not know too well It seems that our frames of reference are not the same. We just cannot agree on certain points of discussion Lack of knowledge, little reasoning ability Tends to be biased, without weighing material
(—.26) None given	(—.26) Too conservative Appears a bit too timid
(—.29) None given	(—.29) Do not know too well Lack of knowledge in field, I feel Old, wouldn't be able to tolerate such a scatterbrain as I Too mature and inflexible in her attitudes
(—.42) Friendly, fits into group well	(—.42) Uninformed, tends to lack seriousness My experience makes me too old for her Seems to be "scatter-brained" Uninformed Lacking in self-confidence
(—.45) I accept many of his views that he has made in class, just would like to know him better Would help clarify statements	(—.45) Seems to follow too narrow a line of thought Uncooperative, never a chance to participate in group Doesn't reason as I do Too much "I" Pleasant conversationalist, but has tendency to monopolize Tries to be impressive without making any point, gets off on unmeaningful tangents Uncooperative, does not give the other person a chance to express opinion Talks too much about so little

TABLE II (continued)

"Acceptance" Reasons	"Rejection" Reasons
(—.48)	(—.48)
None given	On defensive toward others
	We don't work together so well
	No—result of dinner conversations
	Over elaborates

TABLE III
SAMPLE RESPONSES OF STUDENTS TO PERSONALIZED SOCIOMETRIC GUIDANCE

STUDENT 1

Personally, I really appreciated the results of the sociometric test. It showed me some "faults" of which I was really not aware. As I look back over the situation I can see that I should have done differently.

A result of the sociometric test, to me at least is that I shall take a different attitude toward my performance in groups. I'll "watch myself."

I believe one should have an opportunity to take such a test quite often. It would help to make him a better leader, or it might show him why he wasn't a leader. One appreciates the power and force of interaction between minds of individuals.

STUDENT 2

The effect of the sociometric knowledge that I received was at first very positive. However, I do not believe it was a clear picture of myself because the person or persons making the responses did not know me long enough to give a fair decision upon me or were there enough responses to give a clear picture of oneself.

Therefore, I tried to improve in some way in the matters suggested to me by the teacher and the social responses.

The true results will be told if our same group responds to each other again or if, in the future, I will again be able to receive a true picture of myself in the ways that others perceive me.

STUDENT 3

It was a definite mistake. For those who have a good impression of themselves it wouldn't make any difference what happened. For those who received favorable comments, naturally it made them feel good. But for those who received rejections, considering that each only rejected three and desired to work with six (leaving a huge number unselected in any manner) and considering that no one could really know all, it would mean that those rejected were really outstandingly obnoxious creatures. Perhaps those rejected are fighting a definite personality problem—really all the device would do is to push the individual from the frying pan into the fire. From my point of view, it is a definite mistake; for all comments are personal and things personal are accepted by the individual emotionally. The device emphasized to me the great worth of bluff—May I incorporate it into my personality.

The reports were generally favorable; but we are here presenting examples of unfavorable as well as favorable reports so that proper precautions may be observed in any future applications of this procedure. (See Table III.)

The foregoing anonymous and frank statements show that some persons (actually most persons) were pleased to learn the effects of the social impact of their personalities while some others (actually a few) could not "take" unfavorable results. They criticized the procedure rather than themselves.

Before concluding this account note may be taken of student responses to the effect of group discussion procedures upon learning. Students in the class were invited to indicate anonymously their judgments of the effect of the class procedure upon their learning. Twenty-nine students responded. The results are shown in Table IV.

TABLE IV

FREQUENCY OF JUDGMENTS OF THE GENERAL EFFECTS OF GROUP DISCUSSION PROCEDURES ON LEARNING SOCIAL PSYCHOLOGY

(Total 29 Students)				
Very Much	Much	Average	Little	Very Little
10	11	7	1	0

Assuming that the three who declined to report learned "very little" in the course, the response of the students was still highly favorable to the group discussion procedure used.

Analyzing the anonymous comments it was found that those who declared the course affected their learning very much believed the discussion "challenged" their thinking and stimulated their studying. They also believed the knowledge they acquired was retained because the group procedure enabled them to put into immediate practice in the group much of what they learned in the social psychology textbook.

Those who reported their learning as average failed to find a very satisfactory group relationship—even after the groups were sociometrically reconstituted; consequently, they were not in a position to receive the full benefit of the plan. Also, persons in this category had difficulty proceeding without the continuous help of the instructor. They had not been used to freedom and responsibility. Another reason for only average learning was the tendency of some groups to "miss the main points, discuss fine details and go off on unrelated tangents."

The only person who stated he learned little said it was "my fault" and that "too often members came unprepared."

Summary. This has been an account of an attempt to develop social leadership abilities among thirty-two college students in a class in social psychology. The procedure used was first, instruction on ways of behaving of social leaders as shown by research in leadership made during recent years, second, guided practice in small group discussion over a period of weeks which provided an opportunity for students to experience leadership behavior patterns while studying social psychology. Finally, after sociometric testing, students were individually appraised of their relative social status as compared with their fellow students and the "reasons" therefor. Most students certified that the procedure was interesting and helped them become more conscious of adjustments they would have to make and that they also learned more than the average amount of subject matter.

It is hoped that the validity of the foregoing procedure may be subjected to rigid experimental testing.

THE ACCURACY OF TEACHERS' JUDGMENTS CONCERNING THE SOCIOMETRIC STATUS OF SIXTH-GRADE PUPILS

SECOND PART

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CHAPTER IV

ANALYSIS OF DATA AND RESULTS

The preceding chapter described the method used in investigating this problem. This chapter presents an analysis of the data obtained.

ACCURACY OF TEACHERS' JUDGMENTS OF SOCIOMETRIC STATUS

To determine the extent to which teachers are accurate in judging the sociometric status of all pupils in the classroom the sociometric results were analyzed separately for boys and girls, on each of the three criteria, and their relationship to the teachers' judgments determined. This procedure was carried out for each class in the following manner.

The number of choices each pupil received on each of the three criteria of the sociometric test were tallied separately for boys and girls. Each choice was given a value of one regardless of whether it was first, second, third, fourth, or fifth choice. This procedure provided six sets of sociometric results for each class. Three sets of sociometric results represented the sociometric status of boys as work companion, play companion, and seating companion, and three sets represented the sociometric status of girls on the same criteria.

The teacher's judgments of sociometric status were separate for boys and girls, in the form of continuous ranks, on each of the three criteria. These ranks were converted into standard scores, with a mean of zero and standard deviation of one, using Fisher's[1] conversion table. Thus the degree of relationship between the six sets of teacher's judgments and the sociometric results, for each class, could be determined by Pearson product-moment coefficients of correlation. Table IX presents these correlation coefficients for all forty classes. *The degree of relationship expressed by these coefficients is henceforth referred to as the accuracy of the teachers' judgments of sociometric status.*

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[1] Ronald A. Fisher, and Frank Yates, *Statistical Tables for Biological, Agricultural, and Medical Research*. Edinburgh: Oliver and Boyd, Ltd., 1948. P. 66.

TABLE IX
CORRELATION COEFFICIENTS REPRESENTING THE ACCURACY OF TEACHERS' JUDGMENTS OF THE SOCIOMETRIC STATUS OF BOYS AND GIRLS IN FORTY SIXTH-GRADE CLASSES

Class Number	Boys			Girls			Average
	Work Companion	Play Companion	Seating Companion	Work Companion	Play Companion	Seating Companion	Accuracy of All Judgments
1	.265	.112	.480	.643	.502	.509	.419
2	.418	.610	.457	.299	.530	.368	.447
3	.931	.668	.690	.661	.529	.550	.671
4	.012	.640	.657	.599	.414	.577	.483
5	.727	.321	.662	.509	.446	.348	.502
6	.386	.490	.645	.724	.442	.700	.565
7	.288	.062	.568	.131	.205	.355	.268
8	.780	.546	.414	.394	.216	.065	.403
9	.791	.637	.811	.618	.538	.607	.667
10	.365	.360	.627	.712	.557	.666	.548
11	.458	.750	.688	.811	.357	.348	.569
12	.860	.541	.868	.536	.701	.492	.666
13	.791	.687	.521	.652	.792	.744	.698
14	.376	.572	.468	.530	.415	.609	.495
15	.739	.544	.563	.616	.294	.598	.559
16	.480	.079	.464	.899	.905	.843	.612
17	.487	.506	.679	.681	.844	.798	.666
18	.443	.677	.410	.385	.549	.581	.508
19	.603	.627	.626	.738	.572	.748	.652
20	.221	.443	—.105	.758	.552	.606	.413
21	.590	.585	.721	.686	.585	.636	.634
22	.796	.710	.752	.757	.332	.753	.683
23	.553	.544	.625	.372	.505	.558	.528
24	.693	.772	.618	.688	.434	.720	.654
25	.671	.886	.640	.593	.504	.334	.605
26	.858	.544	.821	.872	.866	.899	.810
27	.643	.473	.591	.846	.795	.827	.696
28	.842	.775	.642	.374	.561	.595	.632
29	.234	.858	.686	.795	.796	.787	.693
30	.621	.633	.540	.672	—.114	.511	.477
31	.867	.816	.856	.778	.827	.885	.838
32	.801	.381	.784	.780	.399	.669	.636
33	.713	.682	.644	.426	.525	.643	.605
34	.655	.536	.662	.750	.737	.713	.675
35	.551	.592	.666	.876	.190	.764	.607
36	.715	.693	.499	.654	.584	.725	.645
37	.308	.400	.337	.645	.670	.658	.503
38	.778	.834	.814	.807	.796	.813	.807
39	.700	.389	.713	.634	.295	.611	.557
40	.698	.774	.759	.683	.604	.736	.709
Mean	.593	.569	.614	.640	.531	.624	.595

An examination of this table reveals that all except two of the 240 coefficients are greater than zero and positive. The mean accuracy of the teachers' judgments for boys on the criteria of work companion, play companion, and seating companion is .593, .569, and .614, respectively. The mean accuracy of the teachers' judgments for girls on the same three criteria is .640, .531, and .624, respectively. The last column on the right presents the average accuracy of all of the judgments of sociometric status, for each teacher. An examination of these coefficients will reveal that they vary from .268 to .838 with a mean of .595. Apparently teachers differ rather widely in their ability to make such judgments.

The questions raised in Chapter I concerning the sources of variation in the accuracy of these teachers' judgments, and the relationship of certain variables to this accuracy will now be considered. It was decided that the best means of securing answers to these questions would be to place them in the form of null hypotheses. This will be done, as each question is considered in the following pages.

VARIATIONS IN THE ACCURACY OF TEACHERS' JUDGMENTS OF SOCIOMETRIC STATUS

There were three questions raised in Chapter I concerning the variation in the accuracy of teachers' judgments. These may be stated in the form of null hypotheses as follows:

There is no difference between teachers in the accuracy of their judgments of the sociometric status of pupils in the classroom.

There is no difference in the accuracy of teachers' judgments of the sociometric status of boys and girls in the classroom.

There is no difference in the accuracy of teachers' judgments of the sociometric status of pupils in the classroom on the criteria of work, play, and seating companion.

The above hypotheses were tested by applying an analysis of variance to the 240 correlation coefficients, in Table IX, representing the accuracy of teachers' judgments of boys and girls on each criterion. The results of this analysis are presented in Table X.

An examination of this table reveals that the variation among teachers in the accuracy of their judgments is significant beyond the one per cent level.

TABLE X

ANALYSIS OF VARIANCE OF THE 240 CORRELATION COEFFICIENTS REPRESENTING
ACCURACY OF TEACHERS' JUDGMENTS

		Degrees of Freedom	Sum of Squares	Mean Square
(1)	Teachers	39	3,276,548	84,041
(2)	Pupil	1	2,432	2,432
(3)	Criteria	2	243,482	121,741
	Remainder	197	4,900,879	24,878
	Total	239	8,423,341	

Levels of Significance

$$(1) \quad F = \frac{84,041}{24,878} = 3.3770 \qquad \begin{array}{l} 1\% = 1.69 \\ 5\% = 1.45 \end{array}$$

$$(2) \quad F = \frac{2,432}{24,878} = .0978 \qquad \begin{array}{l} 1\% = 6.76 \\ 5\% = 3.89 \end{array}$$

$$(3) \quad F = \frac{121,741}{24,878} = 4.8935 \qquad \begin{array}{l} 1\% = 4.71 \\ 5\% = 3.04 \end{array}$$

These data are inconsistent with the hypothesis that there is no difference between teachers in the accuracy of their judgments of the sociometric status of pupils in the classroom.

The source of this difference between teachers, in the accuracy of their judgments, will be sought later by determining the relationship between certain selected variables and the average accuracy of the teachers' judgments.

In addition, these data are consistent with the hypothesis that there is no difference in the accuracy of teachers' judgments of the sociometric status of boys and girls in the classroom.

A further examination of Table X reveals that the variation in the accuracy of teachers' judgments among the three different criteria is significant beyond the one per cent level. This finding is inconsistent with the hypothesis that there is no difference in the accuracy of teachers' judgments of the sociometric status of pupils in the classroom on the criteria of work, play, and seating companion.

Since such a difference exists it would be of some value to determine the comparative accuracy of the teachers' judgments on each criterion. An examination of the correlation coefficients in Table IX reveals that the mean accuracy of the teachers' judgments is lowest on the play companion criterion, both for boys and girls.

The question immediately arises as to the significance of these differences. Is the mean accuracy of the teachers' judgments on the play companion criterion significantly different from that on the criterion of seating or work? The answer to this question was determined by applying the Fisher t-test to determine the significance of the difference between means.

The results presented in Table XI, reveal that there is no significant difference between the mean accuracy of the teachers' judgments on the criteria of seating and play, or work and play, for boys. However, the difference between the mean accuracy of the teachers' judgments on these same criteria is significant beyond the five per cent and two per cent levels, respectively, for girls. It appears that the tendency for teachers to be less accurate in their judgments of the sociometric status of pupils on the criterion of play. is more pronounced for girls than boys. The teachers' judgments of girls probably accounts for the major part of the variation among criteria revealed by the analysis of variance.

TABLE XI

SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN ACCURACY OF TEACHERS' JUDGMENTS ON DIFFERENT CRITERIA

Variables	N_1	N_2	M_1	M_2	t	P
Boys						
1. Seating-Play	40	40	.614	.569	1.09	>.10
2. Work-Play	40	40	.593	.569	.51	>.50
Girls						
1. Seating-Play	40	40	.624	.531	2.11	<.05
2. Work-Play	40	40	.640	.531	2.49	<.02

RELATIONSHIP OF SELECTED VARIABLES TO THE AVERAGE ACCURACY OF TEACHERS' JUDGMENTS OF SOCIOMETRIC STATUS

It has been shown that there is a significant variation among teachers in the accuracy of their judgments of the sociometric status of pupils in the classroom. The question immediately arises as to the relationship of certain variables to this difference between teachers in their ability to make such judgments. The variables which were considered important in this respect are the personal-data variables concerned with the training and experience of the teachers, as well as the size of class with which the teachers' judgments were concerned.

Eight of the variables were of a continuous variety and their relation-

ship to the average accuracy of the teachers' judgments may best be tested
by placing them in the form of a null hypothesis, as follows:

There is no relationship between the average accuracy of the
teachers' judgments of the sociometric status of pupils in the class-
room and each of the following variables:

    (1)   Age
    (2)   Years of teaching experience
    (3)   Length of time in present position
    (4)   Semester hours of college training
    (5)   Recency of college training
    (6)   Semester hours in education
    (7)   Semester hours in psychology
    (8)   Size of class.

The above hypothesis was tested by the following procedure. The
correlation coefficients representing the accuracy of the teachers' judgments
on each criterion, for boys and girls, were averaged for each teacher. This
average accuracy of all the judgments, for each teacher, may be seen in the
last column of Table IX. The personal-data variables were collected on a
personal-data form and are presented in Tables II through VII in Chapter
III. The size of class was obtained from analysis of the data and ranged
from fifteen to forty-three pupils per class. The degree of relationship be-
tween these variables and the average accuracy of the teachers' judgments
was obtained by means of Pearson's product-moment coefficients of cor-
relation. The resulting coefficients are presented in Table XII.

An examination of this table reveals that all correlation coefficients are

TABLE XII

CORRELATION COEFFICIENTS REPRESENTING THE DEGREE OF RELATIONSHIP BETWEEN THE
AVERAGE ACCURACY OF TEACHERS' JUDGMENTS AND CERTAIN SELECTED VARIABLES
(N = 40)

Variables	Average Accuracy of Teachers' Judgments	t	P
1. Age	—.021	—.132	.895
2. Years of Teaching Experience	—.035	—.217	.829
3. Length of Time in Present Position	—.021	—.128	.898
4. Semester Hours of College Training	.014	.087	.931
5. Recency of College Training	.017	.104	.917
6. Semester Hours in Education	.010	.060	.952
7. Semester Hours in Psychology	.040	.249	.805
8. Size of Class	—.007	—.045	.964

near zero. To determine if any of the coefficients were significantly different from zero Fisher's t-test was applied and the values of P determined. All of these values are greater than .80, which means that one could expect correlations of this size or greater, eighty, or more, times out of a hundred if the true correlation were zero.

These data are consistent with the hypothesis that there is no relationship between the average accuracy of the teachers' judgments of the sociometric status of pupils in the classroom and each of the eight selected variables.

These results are somewhat surprising, especially since a study[1] discussed in Chapter II showed that variables three through seven were significantly related to elementary teachers' knowledge of child and adolescent behavior, as measured by an objective test. Two possible explanations may be presented to account for the lack of relationship found in this study. First, the accuracy of the teachers' judgments of sociometric status in the classroom is not dependent merely upon general knowledge of a child and adolescent behavior, but upon the application of that knowledge to a restricted area. Second, the judgment of sociometric status is a specific type of judgment dependent upon insight into group life, which apparently is not obtained from general training or experience.

The lack of relationship between the size of class and the average accuracy of the teachers' judgments may be partly explained by the restricted range in class size. The number of pupils per class ranged from fifteen to forty-three. It is possible that the accuracy of the teachers' judgments of sociometric status is not affected by class size within this range.

RELATIONSHIP OF OTHER VARIABLES

In addition to the eight variables treated above, three variables, considered to be important, were of a dichotomous variety and required separate treatment. Stated in null hypothesis form:

There is no difference in the accuracy of teachers' judgments of the sociometric status of pupils in the classroom, between:

(1) Those teachers who are single, and those who are married.
(2) Those teachers who were with the class two semesters, and those who were with the class one semester.
(3) Those teachers who had taken a course in Child Development, and those who had not taken such a course.

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[1] Travers, *op. cit.*, p. 66.

To test the above hypothesis the mean accuracy of the teachers' judgments were calculated for the teachers in each category. The significance of the difference between these means was determined through application of the Fisher's t-test. The number of teachers falling in each category, the mean accuracy of the teachers' judgments, and the significance of the difference between means is presented in Table XIII.

TABLE XIII

SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN ACCURACY OF TEACHERS' JUDGMENTS
FOR THREE SELECTED VARIABLES

	Variable	N_1	N_2	M_1	M_2	t	P
1.	Marital Status	18 single	22 married	.611	.582	.79	>.10
2.	Length of time with Class	24 Two Semesters	16 One Semester	.604	.581	.61	>.10
3.	Course in Child Development	15 Yes	25 No.	.678	.545	12.96	<.01

This table reveals that the difference between the mean accuracy of judgment of the eighteen single teachers and the twenty-two married teachers is not significant at the ten per cent level. A difference this large or larger would be expected ten, or more, times out of a hundred, by chance alone, if the true difference were zero.

The difference between the mean accuracy of judgment of the twenty-four teachers who were with their classes two semesters and the sixteen teachers who were with their classes one semester is also not significant. It is possible that teachers know their pupils well enough after one semester to make such judgments, and a longer contact with the pupils does not improve the accuracy of these judgments to any significant degree. Further research would be required to verify such a possibility.

A further inspection of Table XIII will reveal that there is a significant difference between means on the last variable. The difference between the mean accuracy of judgment of the fifteen teachers who had taken a course in Child Development and the twenty-five teachers who had not taken such a course is significant far *beyond* the one per cent level. Less than once out of a thousand would such a difference occur by chance if the true difference were zero. An inspection of the means reveals that this difference is in favor of more accurate judgments by those teachers who had taken a course in Child Development.

This finding must be interpreted in light of the type of Child Development course taken by these fifteen teachers. The majority of these teachers had taken an in-service course, offered in Flint, through the cooperation of the University of Michigan. The content of the course centered around the development of the whole child, with a great deal of emphasis on social adjustment. In this area the class members were made familiar with the theory of the sociometric technique and its application to the classroom.

In regard to the above course description several explanations appear possible for the more accurate judgments made by teachers taking such a course. First, taking the course while in service may have provided an immediate application of the principles of child development learned, thus increasing the practical benefits of the course. Second, the emphasis in the course on social adjustment may have made the teachers more aware of the social adjustment of the pupils in their classes, thus focusing their attention on this important area. Third, familiarity with the sociometric technique and its application in the classroom may have made the teachers more conscious of overt signs of choice behavior in the classroom, thus increasing the accuracy of their observations.

It is, of course, entirely possible that none of the above explanations are valid. It may be that those teachers who are more conscientious, and more concerned about the social adjustment of their pupils, to begin with, elect to take such a course. The data presented here can only reveal that there is a relationship between taking a course in Child Development, as described above, and greater accuracy in teachers' judgments of sociometric status of pupils in the classroom. Further research would be required to identify the cause of this relationship.

These data are consistent with the hypothesis, regarding the first two variables, that there is no difference in the accuracy of teachers' judgments of the sociometric status of pupils in the classroom, between: those teachers who are single, and those who are married; those teachers who were with the class two semesters, and those who were with the class one semester.

These data are inconsistent with the hypothesis, regarding the third variable, that there is no difference in the accuracy of teachers' judgments of the sociometric status of pupils in the classroom, between: those teachers who had taken a course in Child Development and those who had not taken such a course.

RELATIONSHIP BETWEEN TEACHERS' PREFERENCES FOR CERTAIN PUPILS AND ERRORS IN THEIR JUDGMENTS OF THE SOCIOMETRIC STATUS OF THOSE PUPILS

It will be recalled that each of the forty teachers in this study was requested to indicate which three boys and three girls she *most* preferred as pupils in her class, and which three boys and three girls she *least* preferred as pupils in her class. These data were gathered to determine if the teacher's preference for certain pupils was related to the errors in her judgments of the sociometric status of those pupils. In view of a study[1] quoted in Chapter II, it seemed probable that a teacher may over-judge the sociometric status of those pupils she most prefers and under-judge the sociometric status of those pupils she least prefers. To determine if such a tendency existed the following null hypotheses were tested.

> Teachers do not *over-judge* the sociometric status of the three boys and three girls they *most* prefer as pupils in class.
> Teachers do not *under-judge* the sociometric status of the three boys and three girls they *least* prefer as pupils in class.

The procedure used in testing the above hypotheses was to compare the teachers' judgments with the sociometric results, for the pupils in each of the four preference groups, and to determine the amount and direction of the teachers' judgment error. However, before this comparison could be made it was necessary to convert both the teachers' judgments and the sociometric results into total comparable scores. This was done for each class in the following manner.

It will be recalled that the teacher's judgments were separate for boys and girls. These judgments were in the form of continuous ranks on each of the three criteria for boys, and each of the three criteria for girls. These ranks had been converted into standard scores, with a mean of zero and a standard deviation of one, as previously described. Thus each boy had a standard score representing the teacher's judgment of his sociometric status on each of the three criteria. An average of these three standard scores would yield the teacher's judgment of the total sociometric status of each boy in her class. The teacher's judgment of the total sociometric status of each girl in her class could be computed the same way. Since the standard scores were averaged the resulting distributions for boys and girls would still have a mean of zero and a standard deviation of one.

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[1] Travers, *op. cit.*, p. 66.

To make the sociometric results, for boys and girls, comparable to these teachers' judgments the following procedure was used. The number of choices each boy received on the three criteria of the sociometric test were totaled. These total sociometric scores for boys were converted into standard scores with a mean of zero and a standard deviation of one. The total sociometric scores for girls were computed in the same way, and converted into similar standard scores.

The above procedure provided two sets of comparable standard scores for each boy and girl in class: one set representing the teacher's judgment of the total sociometric status of the pupil, and one set representing the total sociometric status of the pupil as measured by the sociometric test.

The average amount of discrepancy between these two sets of standard scores was computed for each of the following groups: three boys *most* preferred by the teacher; three boys *least* preferred by the teacher; three girls *most* preferred by the teacher; and three girls *least* preferred by the teacher. If this discrepancy indicated the teacher had *over-judged* the sociometric status of those pupils she *most* preferred, or *under-judged* the sociometric status of those pupils she *least* preferred it was designated as a *positive-judgment error,* since it was in the direction of the teacher's preference. If this discrepancy indicated the teacher had *under-judged* the sociometric status of those pupils she *most* preferred, or *over-judged* the sociometric status of those pupils she *least* preferred it was designated as a *negative-judgment error;* since it was away from the teacher's preference.

The above procedure was carried out for each of the forty classes. Table XIV presents the average amount and direction of error in the teachers' judgments of the pupils in each of the four preference groups. An examination of this table will reveal that the majority of judgment errors are positive for each preference group. This indicates a tendency for more teachers to *over-judge* those pupils they *most* prefer and to *under-judge* those pupils they *least* prefer. The last column on the right presents the total judgment error for each teacher. It will be noticed that only five of the values are negative. In other words, thirty-five of the forty teachers made greater judgment errors in the direction of their preferences.

A further examination of Table XIV will reveal that the mean error of the forty teachers' judgments is positive for each preference group. Had no relationship been present between the teachers' judgments and their preferences, for the pupils in these groups, one would expect random errors of judgment with resulting means of zero. Thus the significance of these means can be determined by applying the Fisher t-test to determine if

TABLE XIV

AVERAGE AMOUNT[1] AND DIRECTION[2] OF ERROR IN TEACHERS' JUDGMENTS OF THE
SOCIOMETRIC STATUS OF BOYS AND GIRLS THEY MOST AND LEAST PREFER
AS PUPILS IN CLASS

| Teacher Number | Boys | | Girls | | Total Judgment Error for Each Teacher |
	Three Most Preferred	Three Least Preferred	Three Most Preferred	Three Least Preferred	
1	+ .72	+1.04	+ .30	.00	+2.06
2	+ .52	+ .33	— .09	+ .77	+1.53
3	+ .09	— .08	+ .14	+ .15	+ .30
4	+ .51	+1.00	+ .02	+ .10	+1.63
5	— .42	+ .38	+1.00	+ .62	+1.38
6	+ .74	+ .04	.00	+ .37	+1.15
7	+ .75	+ .24	— .02	+ .52	+1.49
8	— .11	+ .67	+1.05	+ .28	+1.89
9	+ .17	+ .23	+ .64	+ .97	+2.01
10	— .57	+ .66	+ .28	+ .66	+1.03
11	— .54	+ .52	+ .40	— .05	+ .33
12	+ .30	— .24	— .52	+ .22	— .24
13	+ .20	+ .23	+ .13	— .15	+ .41
14	— .14	+ .73	+ .31	+ .29	+1.19
15	— .42	— .59	— .16	— .24	—1.41
16	+ .80	— .34	.00	+ .01	+ .47
17	+ .07	+1.39	.00	+ .21	+1.67
18	+ .14	+ .12	+ .24	+ .85	+1.35
19	+ .59	+1.09	— .18	— .16	+1.34
20	+ .98	+ .06	— .19	— .27	+ .58
21	+ .14	+ .86	+ .19	+ .36	+1.55
22	+ .12	— .14	— .07	+1.10	+1.01
23	+ .04	+1.09	+ .59	+ .28	+2.00
24	— .15	+ .09	+ .67	+ .02	+ .63
25	+ .48	+ .18	— .47	+ .23	+ .42
26	— .16	+ .27	— .10	+ .11	+ .12
27	+ .36	+ .41	.00	— .43	+ .34
28	+ .18	+ .26	+ .63	+ .38	+1.45
29	— .53	.00	+ .01	+ .06	— .46
30	— .65	+ .12	+ .01	+ .68	+ .16
31	— .04	+ .14	— .25	— .28	— .43
32	+ .28	+ .72	— .16	+ .93	+1.77
33	+ .58	+ .39	+ .34	+ .71	+2.02

[1] Amount of error is expressed in standard scores with a mean of zero and standard deviation of one.

[2] Direction is expressed by algebraic sign. Plus (+) indicates error in the direction of the teachers' preference. Minus (—) indicates error away from teachers' preference.

TABLE XIV (*continued*)

Teacher Number	Boys Three Most Preferred	Boys Three Least Preferred	Girls Three Most Preferred	Girls Three Least Preferred	Total Judgment Error for Each Teacher
34	+ .02	− .09	+ .30	+ .73	+ .96
35	+ .41	+ .63	+ .07	+ .33	+1.44
36	− .13	+ .39	+ .02	+ .36	+ .64
37	+ .59	+ .93	+ .05	− .09	+1.48
38	+ .42	+ .19	− .04	+ .03	+ .60
39	− .47	+ .13	+ .40	− .20	− .14
40	− .26	+ .51	+ .40	+ .49	+1.14
Mean	+ .14	+ .37	+ .15	+ .27	+ .93

they are significantly different from zero. This was done for the mean error of judgment in each group. The results are presented below in Table XV.

TABLE XV

SIGNIFICANCE OF THE MEAN ERROR OF THE FORTY TEACHERS' JUDGMENTS FOR THE THREE BOYS AND THREE GIRLS MOST AND LEAST PREFERRED BY THE TEACHER

Group	N	M	t	P
Boys				
Most Preferred	40	.14	2.05	<.05
Least Preferred	40	.37	5.33	<.01
Girls				
Most Preferred	40	.15	2.73	<.01
Least Preferred	40	.27	4.52	<.01

This table reveals that all four means are significantly different from zero if the five per cent level of significance is accepted. Three of the means are significant beyond the one per cent level. Means this large or larger would be expected less than once out of a hundred by chance if the true means were zero.

These data are inconsistent with the hypothesis that teachers do not *over-judge* the sociometric status of the three boys and three girls they *most* prefer as pupils in class. Likewise, these data are inconsistent with the hypothesis that teachers do not *under-judge* the sociometric status of the three boys and three girls they *least* prefer as pupils in class.

Bias and the Accuracy of Teachers' Judgments

It has been shown that teachers' judgments of sociometric status have a tendency to be biased in the direction of their preference for having or not having certain pupils in class. The question immediately arises as to the relationship between the degree to which a teacher's judgments are biased in this way, and the accuracy of her judgments of all pupils in the classroom.

To determine if there is such a relationship the following null hypothesis was tested.

> There is no relationship between the degree to which teachers' judgments of sociometric status are biased in the direction of the three boys and three girls they most and least prefer as pupils in class, and the accuracy of their judgments of the sociometric status of all pupils in the classroom.

To test the above hypothesis it was necessary to calculate the total amount of bias entering into each teacher's judgments of the three most and three least preferred boys and girls. The last column on the right in Table XIV presents this total. When this total amount of bias for each teacher was correlated with the average accuracy of each teacher's judgments of the sociometric status of all pupils in the classroom a coefficient of —.37 was obtained. The negative relationship expressed by this correlation coefficient reveals a tendency for a larger bias in teachers' judgments to be associated with less accurate judgments. Applying a Fisher t-test to this correlation coefficient it was found to be significantly different from zero. A coefficient this large or larger would be expected only twice out of a hundred by chance if the true correlation were zero.

These data are inconsistent with the hypothesis that there is no relationship between the degree to which teachers' judgments of sociometric status are biased in the direction of the three boys and three girls they most and least prefer as pupils in class, and the accuracy of their judgments of the sociometric status of all pupils in the classroom.

Relationship Between the Freedom Pupils Have in Class and the Accuracy of the Teacher's Judgments of Sociometric Status

As previously discussed, it appeared probable that a teacher who allowed pupils greater freedom in class activities would be more accurate in her judgments of sociometric status. This was based on the assumption

that more overt choice behavior would be exposed to the teacher, resulting in a better basis for her judgments. To determine if such an assumption is tenable the following null hypothesis was tested.

There is no relationship between the freedom pupils have in class, as determined by their responses to eight items on a pupil-activity form, and the accuracy of teachers' judgments of sociometric status.

It will be recalled that the pupils in each of the forty classes were requested to respond to a pupil-activity form, indicating the range of activity they had in class and the freedom they had in carrying out this activity. The pupils' responses to the eight questions on this form were scored in the following manner.

The first question requested each pupil to indicate how many class-mates he worked or studied with during the past week. The responses to this question were scored, for each class, by taking the median number of pupils indicated.

The remaining seven questions had two alternative answers: one indicating freedom of pupils to choose their own companions, move around in class, and associate with other class members; the other alternative indicating lack of freedom in these areas. The responses to each of these seven questions were scored, for each class, by calculating the difference between the number of pupils selecting each alternative. If this difference was in the direction of more pupils indicating freedom of activity it was assigned a plus (+). If this difference was in the direction of more pupils indicating a lack of such freedom it was assigned a minus (—). To make these scores comparable for all classes they were divided by the number of pupils in class.

The above procedure provided an index of pupil freedom on each question for all forty classes. Since each question was concerned with free-dom in a specific activity it was decided to correlate the index of pupil freedom on each question with the accuracy of the teachers' judgments of boys and girls on each criterion.

Table XVI presents the resulting correlation coefficients. An examina-tion of these coefficients will reveal that they are all small and approxi-mately evenly divided between positive and negative. They range from —.373 to .363. The Fisher t-test was applied to each of these coefficients to determine if any of them were significantly different from zero. It was found that only two were significantly different from zero at the five per cent level. These were the extreme negative and positive values just men-

TABLE XVI
CORRELATION COEFFICIENTS REPRESENTING THE DEGREE OF RELATIONSHIP BETWEEN THE ACCURACY OF FORTY TEACHERS' JUDGMENTS OF SOCIOMETRIC STATUS AND PUPILS' RESPONSES TO EIGHT ITEMS ON A PUPIL-ACTIVITY FORM

| Items on Pupil-Activity Form | Accuracy of Teachers' Judgments | | | | | |
| | Boys | | | Girls | | |
	Work Companion	Play Companion	Seating Companion	Work Companion	Play Companion	Seating Companion
1	.135	—.123	—.090	.010	—.050	—.013
2	—0.45	.210	.070	.139	—.091	—.036
3	.149	—.025	.128	.177	.014	.148
4	—.126	—.051	—.292	—.373*	—.082	—.234
5	.152	—.100	—.109	.013	—.019	—.159
6	.363*	.143	.111	.072	.167	.095
7	—.012	.044	.309	.064	.163	.067
8	—.193	—.169	—.034	.208	.183	.040

*Significantly different from zero at the five per cent level.

tioned. It would be expected on the basis of chance alone that two of these correlations would exceed the five per cent level of significance so one can conclude that the data are consistent with the null hypothesis that no relationship exists between the variables under discussion.

Since the relationship between the class response to each item and the teacher's judgments of the boys and girls on each criterion was not significant it was decided to correlate the total score on the pupil-activity form, for each class, with the average accuracy of the teachers' judgments. This yielded a correlation coefficient of .133, which was not significantly different from zero at the ten per cent level.

These data are consistent with the hypothesis that there is no relationship between the freedom pupils have in class, as determined by their responses to eight items on a pupil-activity form, and the accuracy of teachers' judgments of sociometric status.

SUMMARY

An analysis of the data has revealed the extent to which teachers are accurate in judging the sociometric status of sixth-grade boys and girls on the criteria of work companion, play companion, and seating companion.

The findings indicated no difference in the accuracy of the teachers' judgments of boys and girls. Their judgments on the play companion criterion were slightly less accurate than on the criteria of work companion and seating companion.

The ability to make accurate judgments of sociometric status varied widely among the forty teachers. This variation could not be accounted for by the general training and experience of the teacher, size of class, marital status of teacher, length of time the teacher had been in contact with the class, or the freedom pupils felt they had in class. The data revealed more accurate judgments by those teachers who had taken a course in Child Development.

There was a tendency for teachers to over-judge the sociometric status of those pupils they most preferred, and to under-judge the sociometric status of those pupils they least preferred. The amount of bias in this direction was negatively related to the accuracy of their judgments.

CHAPTER V

SUMMARY OF THE STUDY, CONCLUSIONS, AND SUGGESTIONS FOR FURTHER RESEARCH
THE PROBLEM AND THE METHOD OF STUDY

The problem defined in the first chapter was that of determining the accuracy of teachers' judgments concerning the degree to which sixth-grade pupils are accepted by their classmates, and the relationship of certain variables to the accuracy of these judgments. The acceptance of sixth-grade pupils by their classmates was determined by the administration of a sociometric test. The number of choices a pupil received on this test was referred to as his sociometric status. Various specific questions were raised concerning the accuracy with which teachers could judge this sociometric status. A review of the related literature revealed that these questions had not previously been answered.

The method of investigating the problem was discussed in the third chapter. It consisted of the following procedures. A sociometric test was administered to forty sixth-grade classes. On this test each pupil was requested to choose the five classmates with whom he would most prefer to work, the five classmates with whom he would most prefer to play, and the five classmates near whom he would most prefer to sit. In addition, each pupil was requested to respond to eight questions concerning the freedom he had in carrying out routine class activities.

Each teacher, in the same forty classes, made judgments concerning the sociometric status of her pupils on the criteria of work companion, play companion, and seating companion. In addition, each teacher indicated which three boys and three girls she most preferred as pupils in her

class, and which three boys and three girls she least preferred as pupils in her class. Personal data information concerning the teachers' training and experience were obtained from the school records wherever possible. Where the school records were not available, the teachers provided the desired information on a personal-data sheet.

The forty sixth-grade classes used in this study ranged in size from fifteen to forty-three pupils per class, with an average of thirty-two. There were 1,258 pupils in all, of whom 632 were boys and 626 were girls. The average age of the boys was 11.8 years, while the average age of the girls was 11.5 years. All except five of the 1,258 pupils were white.

The teachers included in this study consisted of forty women, all of whom were white. The personal-data variables describing the experience and training of these teachers were spread over a wide range. The average teachers, representing this group, was described as approximately forty-seven years of age, with twenty years of teaching experience, thirteen of which were spent in her present position. She was described as having 114 semester hours of college credit, with twenty-two of these in education courses, and nine of them in psychology. Half of her college training was earned before 1932. In addition to the above description of the teacher population, it was found that eighteen of the teachers were single, in comparison with twenty-two married. Sixteen of the forty teachers had been with their classes only one semester and the remaining twenty-four had been with their classes for one school year. Fifteen had taken a course in Child Development and twenty-five had not taken such a course.

The data used in this study were collected during the last three weeks of May, 1949, just before the close of the school year. In collection of the data the investigator contacted each class personally, and used standardized directions for the administration of the sociometric test. The teachers' judgments and preferences were recorded on previously prepared forms and mailed to the investigator within a short time after the sociometric testing. Code numbers were used on these forms so that the teachers' responses would be anonymous to everyone but the investigator. The adequacy of the above procedure was revealed by the quick return and completeness of the responses to all forms.

The teachers' judgments were separate for boys and girls, in the form of continuous ranks, on each of the three criteria. These ranks were converted into standard scores with a mean of zero and standard deviation of one. The relationship between these teachers' judgments of sociometric status and sociometric status as measured by the sociometric test was

determined by Pearson product-moment coefficients of correlation. The degree of relationship expressed by these coefficients was referred to as the accuracy of the teachers' judgments.

It was decided that the questions raised in the first chapter, concerning the accuracy of these teachers' judgments, could best be answered by placing them in the form of null hypotheses and determining the consistency of the data with each hypothesis. This was done in the last chapter. The results revealed the data to be consistent with each of the conclusions listed below.

MAIN CONCLUSIONS AND THEIR INTERPRETATIONS

1. There is a difference between teachers in the accuracy of their judgments of the sociometric status of sixth-grade pupils in the classroom. Correlation coefficients representing the average accuracy of each teacher's judgments ranged from .268 to .838, with a mean of .595.

This finding should have some value for teacher training and selection. If the teacher is to be effective in the social adjustment of pupils she must be able to recognize the pupil's present status. From the above findings it is apparent that the ability to do this varies rather widely among teachers. Would it not be wise, then, to take this ability into account in the training and selection of teacher candidates? It is true that much more needs to be known about this area before positive recommendations can be made, but teacher training institutions would do well to make explorations of this ability among their student teachers.

2. There is *no* difference in the accuracy of teachers' judgments of the sociometric status of boys and girls in the classroom.

It is often said that women teachers do not understand boys as well as they do girls. Since all of the teachers in this study were women it is apparent that these data are not consistent with that belief, in so far as judging the sociometric status of pupils is concerned.

3. There is a difference in the accuracy of teachers' judgments of the sociometric status of pupils in the classroom among the criteria of work companion, play companion, and seating companion. This difference was accounted for to a major extent by the lower accuracy of the teachers' judgments on the play companion criterion. This tendency was greater for girls than for boys.

This finding was not surprising since a majority of the teachers stated they had not had the opportunity to observe the pupils as much on this criterion as on the other two.

4. There is *no* relationship between the average accuracy of the teach-

ers' judgments of the sociometric status of pupils in the classroom and each of the following variables: age of teacher, years of teaching experience, length of time in present position, semester hours of college training, recency of college training, semester hours in education courses, semester hours in psychology courses, and size of class.

Apparently the ability required in making judgments of sociometric status is not dependent upon the general training and experience revealed in the first seven variables. Since this is a specific type of judgment based on insight into group life it is possible that training of a specific nature is required.

The lack of relationship between the size of class and the accuracy of the teachers' judgments may be partly explained by the restricted range in class size. The number of pupils per class ranged from fifteen to forty-three. Apparently the accuracy of teachers' judgments of sociometric status is not affected by class size within this range.

5. There is *no* difference in the accuracy of teachers' judgments of the sociometric status of pupils in the classroom between: those teachers who are single and those teachers who are married; those teachers who were with the class two semesters and those who were with the class one semester.

There is a difference in the accuracy of teachers' judgments between those teachers who had taken a course in Child Development and those who had not taken such a course. This difference was in favor of more accurate judgments by those teachers who had taken the course.

The course taken by these teachers was described as one concerned with the development of the whole child, in which emphasis was given to social adjustment and the application of the sociometric technique. In light of the above course description it appears possible that these teachers may have become more aware of social adjustment, and more conscious of overt signs of choice behavior in the classroom, thus increasing the accuracy of their judgments. On the other hand, it may be that those teachers who elected to take such a course were more accurate judges of sociometric status to begin with.

The data in this study have merely revealed a relationship between taking a course in Child Development, as described above, and greater accuracy in teachers' judgments of sociometric status. However, this provides a fruitful area for further research. The cause of this relationship may provide a valuable lead in the training of teachers to make such judgments.

6. There is a tendency for teachers to *over-judge* the sociometric status of the three boys and three girls they *most* prefer as pupils in class, and to *under-judge* the sociometric status of the three boys and three girls they *least* prefer as pupils in class. This systematic bias in teachers' judgments appeared to a marked degree with all four groups of pupils.

This phenomenon is consistent with a study mentioned in the related literature, concerned with the judgment of group opinion. It also supports the statement that teachers tend to confuse the social adjustment between children with the social adjustment between adults and children.

7. There is a relationship between the degree to which teachers' judgments of sociometric status are biased in the direction of the three boys and three girls they most and least prefer as pupils in class, and the accuracy of their judgments of the sociometric status of all pupils in the classroom.

This relationship revealed a tendency for a larger bias in teachers' judgments to be associated with less accurate judgments. This accounts in part for the difference between teachers in the accuracy of their judgments of sociometric status.

8. There is *no* relationship between the freedom pupils have in class, as determined by their responses to eight items on a pupil-activity form, and the accuracy of teachers' judgments of sociometric status. This finding was surprising since it was assumed that pupils would exhibit more overt choice behavior, observable to the teacher, where they were given greater freedom in class. It was believed that this would provide a better basis for the teacher's judgments of sociometric status, resulting in more accurate judgments.

The lack of relationship found in this study reveals that the amount of freedom which pupils were allowed in choosing their own companions, moving around in class, and associating with their classmates, cannot account for the difference between teachers in the accuracy of their judgments of sociometric status.

IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The conclusions just listed have at least provided tentative answers to the questions raised in the first chapter. They have helped to clarify a special ability desirable in teachers, and suggest some modifications in the training and selection of teacher candidates. In addition, they have shown some light on the extent to which adults have insight into childhood and adolescent groups. The implications of these conclusions as well as problems they suggest for further research will now be considered.

The social adjustment of pupils has received much emphasis in education. The majority of the teacher's efforts in this area has been dependent upon her judgment of the social adjustment of the pupils in her classroom. This study has shown that the ability of teachers to make such judgments, in a special area, varies widely among teachers. Some teachers are so inaccurate in their judgments that it is hard to believe that their efforts in this area can be effective at all. On the other hand, some teachers' judgments are quite accurate. The investigator will admit that accurate judgments of social adjustment are not necessarily followed by proper ameliorative practices. It is only emphasized here that accurate judgments are a prime prerequisite. However, this does raise the question of the relationship between the ability of teachers to make such judgments and indices of teaching efficiency. Research in this area may provide an improvement in the selection of teacher candidates.

It has been shown that teachers with the ability to make accurate judgments in this area cannot be selected in terms of general training and experience. Therefore, some specific training has been suggested. The more accurate judgments made by teachers who had taken a course in Child Development has revealed an important lead in this direction. Before any recommendations can be made concerning the value of such training, in this respect, further research would be necessary. This may be done with a group of teachers making judgments before and after taking such a course.

In addition to the above suggested researches, it would appear valuable to determine the comparative accuracy of teachers' judgments at different grade levels. One of the research studies discussed earlier has shown a declining accuracy from the kindergarten to the seventh grade. This should be substantiated with a larger number of teachers at each grade level.

The tendency for teachers to over-judge those pupils they most prefer and under-judge those pupils they least prefer would appear to handicap their efforts in the area of social adjustment. This phenomenon may be so deeply seated in human nature that it cannot be eradicated entirely. However, it calls for increased emphasis, in teacher training institutions, on the teacher's awareness of the pupil's role to his classmates in relation to the pupil's role to herself.

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APPENDIX

SOCIOMETRIC TEST

Name.................................... School..............................

Are you a boy or girl?...................... How old are you?..................

We would like to know which children *in this room* you prefer to work and play with. Write the names of those whom you would choose; choose anyone *in this room* you wish; your choices will not be mentioned to anyone else. Give both first and last names. Spell them the best you can.

I would choose to *work* with these children:

1. ....
2. ....
3. ....
4. ....
5. ....

I would choose to *play* with these children:

1. ....
2. ....
3. ....
4. ....
5. ....

I would choose to have these children *sit near* me:

1. ....
2. ....
3. ....
4. ....
5. ....

PUPIL-ACTIVITY FORM

What I Do in This Class

Please read the following questions, and *underline* the answer which you think best answers the question.

1. How many different pupils did you study or work with in class last week?

1	5	9	13
2	6	10	14
3	7	11	15
4	8	12	

2. Do you usually choose your own study or work companions in this class, or does the teacher choose them for you?

    (a)   Choose them myself

    (b)   Teacher chooses them for me

3. Do you usually move around in class when studying with other pupils, or working on group projects?

    (a)   Yes

    (b)   No

4. Do you usually visit with other pupils in class when studying with others, or working on group projects?

    (a)   Yes

    (b)   No

5. Did you choose the seat you are now sitting in, or did the teacher ask you to sit there?

    (a)   Chose it myself

    (b)   Teacher asked me to sit here

6. Do you ever play games in this class?

    (a)   Yes

    (b)   No

7. If you play games, do you usually choose your own play companions, or does the teacher choose them for you?

    (a)   Choose them myself

    (b)   Teacher chooses them for me

8. Do you usually raise your hand before talking out loud to your neighbor, in class?

    (a)   Yes

    (b)   No

GENERAL INSTRUCTIONS TO TEACHERS

The students in your class will be asked to name the five children with whom they would *prefer to work* the five children with whom they would *prefer to play,* and the five children near whom they would *prefer to sit.* The total number of choices each child receives on each of the above, will indicate his (her) acceptability to his (her) classmates as *work companion, play companion,* and *seating companion.* On each of these three criteria, some children will be highly accepted, receiving many choices; some will remain unchosen; the remainder will fall in betweeen these extremes. Consequently, the children can be ranked in the order of their relative acceptability from the most accepted to the least accepted.

We are interested in determining the extent to which teachers can judge the relative acceptability of each child to his (her) classmates as work companion, play companion,

and seating companion. As you know, boys and girls at the sixth grade level seldom choose members of the opposite sex as companions. Therefore we are asking you to judge the boys and girls in your class separately.

SPECIFIC INSTRUCTIONS

On the following page, entitled TEACHER JUDGMENT—*Boys,* please write the names of the boys, in your class, in alphabetical order (Place last names first).

On the following page, entitled TEACHER JUDGMENT—*Girls,* please write the names of the girls, in your class, in alphabetical order (Place last names first).

PROCEDURES IN MAKING JUDGMENTS

Turn to the page entitled TEACHER JUDGMENT—*Boys.* In each column, you are to rank all of the *boys* in the order in which you think they are *accepted\ by their classmates.* Use the following procedure:

A. *In the work companion Column:*

   (1) Place a *1* after the boy who you think is most *accepted by his classmates* as work companion.

   (2) Place a *100* after the boy who you think is *least accepted by his classmates* as work companion.

   (3) Place a *2* after the boy who you think is *next most accepted.*

   (4) Place a *99* after the boy who you think is *next least accepted.*

   (5) *Continue this procedure* until each boy is ranked in the work companion column.

   (6) *Now,* place a circle around the rank number of those boys, who you think will receive *no choices* from their classmates as work companion.

   (7) *Next,* fold the work companion column back underneath the page so it is not visible to you.

B. *In the play companion column,* repeat the above procedure for each boy's acceptance as play companion.

C. *In the seating companion column,* repeat the above procedure for each boy's acceptance as seating companion.

When you have completed the ranking in all three columns for boys, and have indicated those in each column who you think will receive no choices, turn to the page entitled TEACHER JUDGMENT—*Girls* and repeat the same procedure.

Code No. ....

TEACHER JUDGMENT—*Boys*

Boys Names (Last, First)	Seating Companion	Play Companion	Work Companion
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			

Code No. ....

TEACHER JUDGMENT—*Girls*

Girls Names (Last, First)	Seating Companion	Play Companion	Work Companion
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			

will
wou
boy
you
then

Boy
1
2
3

Gir
1
2
3

Nar
Nu
Rec

1.
2.
3.
4.
Ma
Ma
Ler
Ind

Lis

1.
2.
3.
4.
5.

Ar

Code No. ....

TEACHER-PREFERENCE FORM

Assume that your class is to be divided into two sections, only one of which you will teach. List below the names of the three boys and the three girls whom you would most prefer as pupils in your section. Also list below the names of the three boys and the three girls whom you would least prefer as pupils in your section. Make your selections only on the basis of how much you would, or would not, enjoy having them as pupils in your section.

Most Prefer	*Least Prefer*
Boys	*Boys*
1.	1. ....
2.	2. ....
3.	3. ....
Girls	*Girls*
1.	1. ....
2.	2. ....
3.	3. ....

Code No. ....

PERSONAL-DATA SHEET

Name.................................... School....................................
Number of years of teaching experience.............. Age............. Sex..........
Record of the college or University training you have had:

Institution Attended	Dates Attended	Semester Hours Credit	Degrees Awarded
1.	....	....	....
2.	....	....	....
3.	....	....	....
4.	....	....	....

Major study in undergraduate training...
Major study in graduate training..
Length of time in present position..
Indicate how many semester hours of credit you have in each of the following fields:

Education		Psychology	
....	Education Psychology	....	General
....	Child Growth and Development	....	Mental Hygiene
....	Guidance	....	Child
....	Other	....	Other

List the specific teaching positions you have held:

Location	Grades Taught	Years
1.	....	....
2.	....	....
3.	....	....
4.	....	....
5.	....	....

Are you: Single.......... Married.......... Widowed.......... Divorced.........

SCALE AND INTENSITY ANALYSIS IN SOCIOMETRIC RESEARCH

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The purpose of this paper is to make some suggestions on the use of Guttman's scale and intensity analysis technique in sociometric research. It seems that this technique may yield a more meaningful and complete picture of the interrelationships between the members of a group than sociometric techniques now in current use.

As is known, scale analysis is a formal method of analysis of qualitative variates. Although some applications of it have been made recently to the analysis of types of behaviour other than attitudes (Ref. 14, 15), up to date it has been used mainly in attitudes studies. The following brief explanation of its main features will refer to its application to attitude research.

(1) A set of questions on a certain universe of content is prepared.

CONTENT OF FEELING
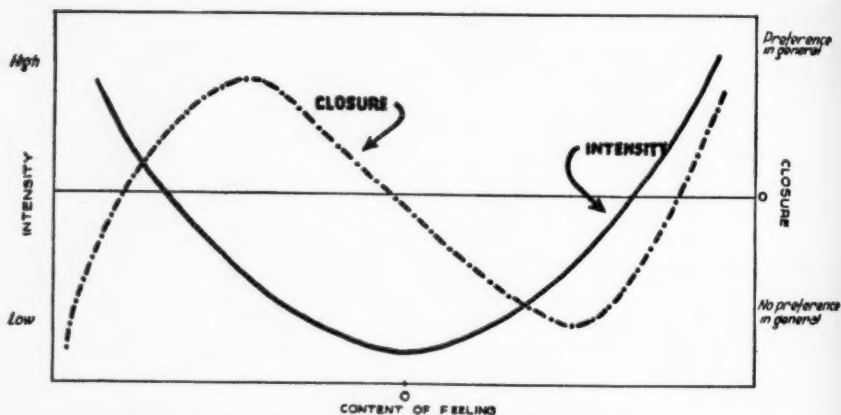
The answers to the set of questions are analyzed in order to discover whether their interrelationships may be accounted for by a single factor. In this case, the pattern of replies is said to form a *scale*. Respondents can then be arranged in a meaningful rank order according to their response patterns from the most positive type to the most negative type.

(2) Mathematical analysis has proved the existence of an infinite number of *principal components* which are functions of the fundamental rank order. Each successive component has one bending point more than the preceding one. The content metric is the first component and has no

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bending point. The second component is a curve with one bending point. The third component, a curve with two bending points. And so on.

(3) So far—besides the content component—only the second and third components have been psychologically identified and are therefore available for practical use and investigation. The second component is the *intensity* of feeling whose single bending point separates positive from negative attitudes.

(4) The third component is called by Guttman *closure*. It is a more general attitude which includes the content attitude as a sub-type—an atti-- tude of attitudes, so to speak. A few examples will clarify the point. The closure of the attitude towards returning to school after discharge from the army is whether the respondent has or has not any plans at all for after discharge. This closure is common to all the attitudes towards other plans after discharge, such as staying in the army, opening a business, etc. The closure of the attitude towards the Negro in the United States is whether the respondent has or has not an attitude toward minorities in the United States. This closure will be common to the attitudes toward each minority group. The closure of the attitude towards a certain industrial product is whether the respondent has or has not an attitude towards products of this type.

The closure curve has two bending points which separate high from low intensities. The far reaching psychological and methodological implications of this discovery need hardly to be stressed.

The sociometric test now in use consists mainly of two types.

In type (a) the respondent is presented with a list of names of persons belonging to a certain group and is requested to indicate which persons he accepts and which he rejects as partners in a particular task.

In type (b) the respondent is likewise presented with a list of names and is requested to indicate his n (generally $n = 3$) first and last choices.

Test of type (a) allow one to depict the mutual relationship between every member and every other member in terms of acceptance or rejection.

Tests of type (b) yield either more detailed information on the feeling of A towards B, or very little information. If B is included by A in his first or last n choice we shall know that A either strongly likes or strongly dislikes B. (At least this is the information the test is supposed to yield.) If B however is not mentioned as one of A choices we shall know nothing of the feeling of A towards B except that these feelings are not very strong.

When information of the type of test (a) is sought, instead of asking A whether he likes or dislikes B it is proposed to prepare a set of scalable

questions on the feelings of A towards B.[1] The larger the number of questions, the finer the determination of the degree of like or dislike of A towards B, provided of course that each answer has different cutting points in the scale pattern. The scale types (or scores) are graded in rank order according to the degree of feeling. So the score may be accepted as a measure of the *content* of feeling (as distinct from *intensity* of feeling) until a more exact metric is introduced.

The scale analysis offers also the opportunity of testing whether different criteria of choice correspond to different roles, whether, in other words, it is true that A may accept B as a co-worker and reject him as a playmate. If this hypothesis is true, then questions relating to different roles will not fit into the same scale pattern.

Besides the content of feeling, its intensity can also be measured by one of the available intensity analysis techniques, thereby obtaining an intensity curve whose bending point separates feelings of attraction from feelings of rejection.

A further set of questions may be introduced in order to measure the third component, or closure. It seems that the closure may be psychologically interpreted as the measure of general preference of the respondent for members of the group. This hypothesis however needs to be tested.

It seems that the questions for the measurement of closure may be of the type "Do you feel any preference for certain members of this group?" "Do you particularly like or dislike certain members of this group?"

The use of the technique proposed in this paper may yield some interesting results by providing new basic kinds of data. The principal components will divide the content continuum into meaningful segments, as follows:

(1)   The intensity and closure curves divide the feeling continuum into four parts (see figure), which are invariant in respect to wording of the sociometric test, namely:

(a)   Attraction—high intensity

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[1] Of course tests of type proposed here are what the sociometrists call "quasi-sociometric" tests. As is known, such tests refer to a hypothetical or "iffy" situation. Many sociometrists believe that only a sociometric test proper can reveal the pattern of interpersonal relationships (see Ref. 8). The difference, however, seems to lie in the degree of interest and participation of the tested individual, and the problems of eliciting reliable answers is basically the same in sociometric as in attitude research; the same techniques for ensuring this end may well be used in both fields. In any event, the hypothesis of a difference between sociometric and quasi-sociometric data may be subjected to experimental verification. This however has not been done to date.

(b)   Attraction—low intensity
(c)   Rejection—low intensity
(d)   Rejection—high intensity

The points of separation of the four segments are determined by the single bending point of the intensity curve (which separates attraction from rejection) and by the two bending points of the closure curve (which separate high from low intensities).

These points were found to be psychologically meaningful in attitude measurement (Ref.: 1, 5, 14), and it may well be that they are also meaningful in sociometric testing.

(2)   Every respondent will have a single score on the closure continuum. This score probably indicates how much he differentiates between the members of the group in his preferences.

But the closure has an intensity curve of its own the bending point of which separates positive from negative total feeling toward the group. A respondent whose closure score is on one side of this bending point will tend to differentiate between the members of the group while a respondent on the other side will tend not to.

(3)   An important psychological corollary of point (2) is that the most extreme rejection for one member of the group comes from respondents who besides repelling him do not differentiate between the various members. (This is the kind of corollary universally implied wherever the closure function exists.)

(4)   A study of actual intensity and closure curves and their mutual positions may lead to the discovery of other important psychological relationships of the type outlined in point (3).

(5)   Another corollary of point (3) is that the test of type (b) succeeds in picking up the members of the group most liked by respondents. This is due to the fact that, before the first bending point of the closure is reached, the intensity and closure curves are more or less parallel, so that the chosen members will be in the segment before the closure first bending point.

The members given as least liked by type (b) tests however lie somewhere in other segments and their exact position is not known, as it depends on the feeling of differentiation of the respondent, feeling that the tests now in use do not measure.

(6)   It is well known that every individual belongs to one or more groups. We can conceive of a differentiation score for every group to which he belongs. It is very likely that the study of the distribution of these scores for each individual may yield meaningful psychological results.

(7) Every member of the group has (besides the score on differentiation of feeling) a score distribution as a chooser and a score distribution as a recipient of choice. All these scores may be represented compactly in a matrix. The very fact that the method proposed in this paper yields more accurate and detailed information on the pattern of intergroup relationship, may well make more acute the need for discovering techniques for the manipulation and analysis of the sociometric matrix. A significant step in this direction has been done by Luce (Ref.: 10, 11).

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A STUDY OF PEER ACCEPTANCE AMONG DELINQUENT GIRLS[1]

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Numerous studies are made on cultures of the various societies of the world, and measures are devised to better enable us to deal with conflicting situations. With the exception of a few who have investigated state training schools, such as Moreno[2] and associates, there has been little work done in studying the friendship formations of delinquent individuals who are placed in these schools. It is common belief that institutions of reform and imprisonment foster relationships that aid the individuals in becoming more firmly entrenched in delinquency and crime. It is surprising how many people who are supposedly well informed are convinced that such institutions are closely knit organizations which, in many instances, are organized against society instead of being rehabilitated to it. An objective for study would be to determine the amount of, or relative degree of, socialization existing in such institutions. One measure of the degree of socialization is the sociometric technique.

The problem of this study is (1) to determine the amount of peer acceptance existing among a group of delinquent girls committed to the Texas State Training School for Girls, Gainesville, Texas, and (2) to determine the relationship between peer acceptance and some other variables.

There are three purposes for this study: The first is to apply the sociometric technique as a measurement of peer acceptance accorded to the girls in each cottage by each other girl in that cottage. A second purpose is to compare the results of the individual cottages with a scale administered to the school as a whole. Another purpose is to show how this acceptance is related to such other variables as nationality, age, mutuality of friendships, present leadership positions, cliques, and emotional expansiveness.

IMPORTANCE OF THE STUDY

It is difficult to conceive of individuals adjusting to groups outside of their own social contact range if they fall among the lowest in peer acceptance among those with whom their associations are most frequent. Those who are already branded with a social stigma, such as these girls confined

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[1] The greater part of this study is taken from a Masters thesis conducted under the auspices of M. E. Bonney at North Texas State College, Denton, Texas, and titled "A Study of Some of the Variables Related to Peer Acceptance at the State Training School for Girls, Gainesville, Texas."

to the State Training School, find it difficult to accept the customs and standards of society without some antagonism and rebellion, even after rehabilitation. Without some element of success in being accepted into groups, an individual may tend to behave in such a manner as to force society to recognize them, even if it is through a negative approach. If we can devise methods which will aid these "social outcasts" to find acceptance among their peers, we will be laying a foundation upon which to build further adjustment to society as a whole.

DEFINITION OF TERMS

Throughout this study, the term "peer acceptance" will be defined as the degree of acceptance of the individual by the other girls in the cottage to which she is assigned, and also the degree of acceptance of the individual by all the other girls in the school, as calculated from a weighted score for the individual taken from a summation of the ratings given her by the other girls in her cottage and the girls in the entire school.

The term "emotional expansiveness", used by Moreno and associates in their sociometric studies, as used in this study will be defined as the total vote or weighted score which the individual gives to the other girls in her cottage, and to the school as a whole.

"Rank in Group" is the rank of the individual among the full population of the cottage, and also a second ranking is given to indicate her rank among the entire population of the school. It is determined by calculating the algebraic sum of the positive and negative scores, and ranking the students by giving the highest positive score a rank of 1, the next highest a rank of 2, etc., until the lowest ranking individual will have either the lowest amount of positive choices over negative choices or the highest amount of negative over positive choices.

The ratio of the weighted scores of the group to the maximum score possible for that group is referred to as the "group acceptance index."

The term "high" used in this study will refer to the individual who is among the top five students in her cottage in peer acceptance, or of the upper 20 percent of the total school population; whereas the term "low" refers to the individual who falls among the lowest five students in peer acceptance in her cottage, or in the lowest 20 percent of the entire school population.

RELATED STUDIES

By far, the most extensive work of this nature was done by Moreno at the New York State Training School for Girls, Hudson, New York (2), and

was later followed by a study made by Jennings (3) at the same school. Both used a local criteria technique that employed such statements as whom the student would like in her study group, or work group, etc. Students were also permitted to list the students they did not wish in such groups; this provided for both positive and negative selections as well as revealing the isolates of the group.

Jennings made an intensive study of the high and low groups in the school, while Moreno concentrated on other variables. Moreno found that there was little discrimination among nationality groups, religious groups, and between intelligence lines. He reports:

At the same time the choices "broke" all the racial and religious and I.Q. lines, colored choosing white, white choosing colored, Catholics choosing Protestants, high I.Q. choosing low I.Q., and vice versa (2, p. 91).

Moreno traced cliques and networks among his groups and gave evidence of such networks existing when he described the running away of 14 girls, many of whom had never attempted to run away before. Tracing interrelationships on sociograms, regardless of whether or not they were assigned to the same cottage. When one or two escaped, it started a chain reaction; each girl followed in the footsteps of her mutual friend.

THE PRESENT STUDY

The State Training School for Girls, Gainesville, Texas, has a population of approximately 125 students, with fluctuations from time to time depending upon commitments and releases. White girls from all over the State of Texas are committed to this school by the courts for rehabilitation, and some have returned because of violation of parole.

It was necessary to limit the study made on the cottages to 110 girls living in the various cottages; some of the students were confined to the hospital, while one or two were employed in the town of Gainesville, Texas, as part of their rehabilitation. For these same reasons, the study of the entire school population was limited to 138 of the 145 girls in the school at that time.

In February, 1950, each cottage was administered the sociometric scale separately. Each cottage had a similar number of students assigned to it. In May of the same year, the scale was administered to the student body as one group.

The age range of the students included in the February study was from 12 years 6 months to 20 years, with an average of 16 years 7 months.

Among the 110 students in the first part of the complete study, 23 were
of Latin-American descent. Data on ages and nationality were not obtain-
able for the May study due to time limitations.

THE SCALE

The scale used in this study was developed by Bonney at North Texas
State College, Denton, Texas (4). Each student is given a mimeographed
form which describes various features we recognize in people who are our
friends or not our friends. It comprises five categories of friendship; two
are positive, two are negative, and one provides for *people* who are unknown
to the student. The student employs the figure *1* for her "best friend,"
figure *2* for "other friends," figure *3* for "people I don't know," figure *4*
for "people I do not want as friends," and figure *5* for "people I do not
want as friends as long as they are like they are now."

It was necessary to revise the original scale in order to apply the
terminology of the statements to the situation found at the training school.
Such statements as "You go to their homes and they come to your home
quite often" for "best friend" were not applicable to this study. A pre-
liminary questionnaire was administered, about three months prior to the
actual testing situation, which requested the students to list the names of
students they felt belonged in each of four categories previously mentioned
(the "don't know" category was not needed at this time), and then tell all
the reasons they could think of as to why they would place the students
they selected in that particular category. The results were compiled and
the statements having the highest tally scores were included in the scale,
and the statements deemed unsatisfactory were deleted from the scale.

Each cottage was administered the scale separately, and with the excep-
tion of the preliminary scale given three months prior, no briefing occurred
so that the students were not aware of the nature of the test they were to
receive. With the aid of competent proctors, the scale was administered to
the various cottages at one time to avoid the possibility of one student
telling another how she had marked that student. The detailed instructions
given with the test requested each student to employ the *figures 1, 2, 3, 4,*
or *5,* to indicate their "best friend," "other friends," "people I don't know,"
"people I do not want as friends," and "people I do not want as friends as
long as they are like they are now," respectively. Each figure could be
employed as many times as the student saw fit; it was not necessary that
the student employ every figure if she felt it did not apply. A figure *6*
was placed opposite the student's own name to indicate the student making
the choices.

The same procedure was used in administering the scale the following May, except that the entire student body was assembled in the lunchroom and took the test as one group.

THE SCORING

After the tests were administered, the scores were placed on a socio-metric matrix chart. A weighted score was given to each figure used, as follows: a weighted score of 2 was given for figure *1*, a weighted score of 1 was given for figure *2*, no score was recorded for figure *3*, figure *4* received a weighted score of —1, and figure *5* was given a weighted score of —2. These scores were added algebraically with the sum of the "received" score divided by the total possible score, if every girl had voted for every other girl as "best friend," indicating the group index. The individual "received" and "given" totals indicate the acceptance and expansiveness scores, respectively. Five charts were used for the February study (one for each cottage), and one large chart for the May study.

ANALYSIS OF DATA

The group indices for the five cottages, found by dividing the algebraic sum of the votes received by the total possible had every girl voted "best friend" for every other girl in her cottage, and in her school in the May test, range from a low of .166 to a high of .429, with a mean group index of .270; the May test group index was .066.

The group indices indicate that there is a paucity of mutual friendships among the girls in the various cottages, and a higher degree of paucity existing in the school as a whole. Table 1 shows the group indices for each cottage as well as the index found in the May test. The situation could

TABLE 1
GROUP INDICES

		Group Index
Cottage	1	.275
	2	.429
	3	.238
	4	.166
	5	.287
Average		.279
May Test		.066

perhaps be improved somewhat if assignments to the various cottages were made on the basis of sociometric tests. Other methods would be needed to improve relationships existing among the entire student body.

HIGH AND LOW VOTING

An analysis of the voting between the highs and lows in each cottage reveals critical ratios ranging from a low of 0 to a high of 8.0, when computing the critical ratio on the difference between the two means, using the formula C.R. = D/σd. The May test reveals critical ratios on high and low voting ranging from .53 to 9.28, using the same formula given above.

The main portion of this paper is devoted to the February study since it was a more comprehensive and intensive study. The May data was additional data obtained to compare with the earlier data.

Using the February study first, an analysis reveals that the 0 was found to exist between the highs → highs and lows → lows in cottage 2; the 8.0 exists in cottage 1 between the highs → lows and lows → highs. Table 2 shows the critical ratios of the votings between the highs and lows in each cottage for the earlier study, and the critical ratios for the May test, with mean critical ratios for the two tests. To avoid repetition "→" indicates "voting for" throughout this section of the paper.

The mean critical ratios for the five cottages shows statistical reliability

TABLE 2
CRITICAL RATIOS

Votings	Cottages					Means	May Test
	1	2	3	4	5		
High → High High → Low	6.91	2.47	4.93	7.47	3.98	5.15	8.86
Low → High Low → Low	2.85	2.96	1.17	1.56	2.87	2.7	6.7
High → Low Low → High	8.0	2.29	.89	3.24	6.56	4.2	9.28
High → High Low → Low	3.08	3.11	3.92	5.1	2.44	6.52	3.53
High → High Low → High	.63	0	1.37	3.41	.24	1.13	.53
Low → Low High → Low	.85	1.01	.74	1.57	.53	.94	2.39

(as near as can be determined from five cases in each category) on the difference of the means of the high → high and high → low; high → low and low → high; and high → high and low → low, and unreliability for the remaining comparisons. Those critical ratios reliable for the five cottages are found to be reliable at the 1% level of significance.

Although not completely reliable, we find that the votings of the low → high and low → low is at the 2% level of significance. There is no reliability found between high → high and low → high, and low → low and high → low.

It is interesting to note that one cottage (4) reveals a reliability at the 5% level of significance in the voting of the high → high and low → high; not one of the cottages has reliability in the voting of the low → low and high % low.

When comparing the May test results with those completed in February, we find similar critical ratios existing. A few differences may be noted, such as the highly reliable C.R. for the low → high and low → low in the May test, but none above the 3.0 level in the February testing. The only completely unreliable result is found to exist between high → high and low → high. The low → low and high → low C.R. of the May test is slightly below 3.0, but of sufficient strength as to carry some reliability. It differs to a large degree from the individual cottage ratios completed in February as well as with the mean of the five cottages for that area of voting.

From this data, one can see that there is a more persistent trend for the low groups to vote for the high groups more than they vote for themselves, and more than the high group will vote for them. What is more, we can expect to find these conditions existing among similar groups tested under similar conditions. This may be an expression, on the part of the lows of a wish to be like the highs and be better accepted among their peers. The high group rejects the low, or refuses to give them recognition through a positive voting, because they (the highs) have attained their "place in the sun" and are not in need of the acceptance of the lows. Jennings makes note of this trend by including in her footnotes the following statement:

Monema E. Kenyon suggests a further explanation: that the leader may hold greater appeal to the isolate (or near isolate) because the former may represent "what he would like to be," a sort of "wish fulfillment" (conscious or otherwise); on the other hand, the citizen who is nearer to average in his psychological position in the group may have adequate satisfactions coming to him in his immediate setting . . . (3, p. 202).

We find, too, from a review of Table 2, that the highs give a greater

portion of their positive choices to other girls who are high in peer acceptance. This tends to develop cliques and networks among the high groups, and, unless there is some mutuality between the highs and lows, the lows will not always be "in on the know" of the affairs of the school and the other girls. The identification of the group seems to be always upward and never downward. That is to say, the highs identify with other highs and the lows identify with the highs; no one identifies herself with a student who is found to be among the lows in peer acceptance.

From an observation of the raw data, one is aware of several instances of strong mutual attachments between students classified among the highs in their cottage and students classified as among the lows in the same cottage. It would be simple enough to speculate as to the reasons for this; probably the best approach would be to make a longer and more detailed study of the individual relationships, and how and why they occur.

POSITIVE AND NEGATIVE CHOICES

The ratio of positive choices over negative choices was computed by dividing the sum of the negative column into the sum of the positive column for each cottage, and for the entire school in the May test. In every case, the positive choices exceeded the negative choices, although in some instances by just a small margin. Moreno found that the positive ratings at the New York school exceeded the negative ratings, and reported " . . . the cohesive forces at work in Hudson were stronger than the forces drawing the girls away from their groupings" (2, p. 103). Bonney, in his 1948 study of the Gainesville school, found a ratio of 1.33:1 of positive over negative choices (5). This data is further corroborated by Jennings' study in which she found that positive choices outweigh negative choices. She comments: "By and large, it is seen that the positive attractions of individuals to one another far outweigh the rejecting or repelling feelings active between them . . . " (3, p. 216). The May study reveals a duplicate finding when compared to that of Bonney. However, when the ratings are computed according to the individual cottages, we find a much higher positive choosing over negative choosing; the mean ratio for the five cottages was computed to be 3:1.

MUTUAL ATTRACTIONS AND REJECTIONS

The mutualities revealed by the sociometric scale are the votings between two people for "best friend" or for "people I do not want as friends as long as they are like they are now," for a weighted score of 2 or —2, respectively. The data for this section comes exclusively from the February study.

It is possible to compute percentages of mutual attractions and mutual rejections by dividing the total possible of mutual attractions if every girl was a best friend to every other girl in her cottage, and the total possible mutual rejections if every girl rejected every other girl in her cottage, into the total number found.

Again we find that mutual attachments exceed the mutual rejections. Cottage 2, which had the highest group index, shows a very small percentage of rejections (.01), and the highest percentage of mutual attachments (.15). Only one cottage exhibited a higher percentage of mutual rejections than attractions; this cottage also has the lowest group index of the five cottages.

For individuals, it is noted that only one student who is rated as number *1* in rank in her cottage has the highest number of strong mutual friends; however, the highest number of strongly mutual friends can be found to be held by one of the students in the high ranking group for each cottage, although not necessarily the number *1* ranking student. The individual having the highest number of mutual rejections is not always the individual ranked as lowest for her cottage; such an occurrence is found in only one cottage. The remaining cottages have the highest number of mutual rejections distributed among the lower half in the cottage. As an example, cottage 1 has the highest number of mutual rejections reported to the student ranking 15th in peer acceptance in her cottage; only one mutual rejection exists for any one girl in cottage 2, and these girls rank from 2.5 to 20.5 in this cottage; cottage 3 lists the student ranking 14th with the highest number of mutual rejections; and the student ranking 18th in cottage 4 has the highest number; cottage 5 gives the most mutual rejections to the student at the bottom of the rankings for that cottage, or 26th place.

From this we see that the student who receives mutual rejections is not necessarily poorly accepted by the other girls in her cottage. The student who is very high in peer acceptance does seem to possess the greatest number of mutual attachments, although it does not mean that she does not possess some mutual rejections as well.

NATIONALITY DIFFERENCES

The rankings of Latin-American students do not vary to any large degree from that of the North American students. The range for the Latin-Americans is from first place in cottage 1 to last place in cottage 5. The mean rank for all the Latin-American students in all five cottages was found to be 14th place. This approximates the average ranking for the five cottages as a whole. The data was not available for the May test.

From these results it would seem that there is little or no discrimination against Latin-American students by the North-American students. It would seem that other factors are involved in peer acceptance than just nationality difference.

AGE AND PEER ACCEPTANCE RANK

The ages of the students were computed at the time of taking the February scale to determine if there was any relationship between the ranking of the student in peer acceptance and her ranking according to her age. The correlation was computed using the formula $\rho = 1 - \dfrac{6\epsilon d^2}{n(n^2-1)}$. Only one of these correlations has any significance and statistical reliability as revealed by PE, the correlation for cottage 5. This figure was found to be .49 $\pm$ .098. Cottage 2 shows an inverse relationship between peer acceptance rank and age rank, the correlation being —.24 $\pm$ .13. The mean correlation was found to be of little statistical validity or significance. The mean correlation for the five cottages was computed to be .12 $\pm$ .13. It would seem that there is little or no relationship between the age of the student and her acceptance by her peers at the Gainesville school. Jennings also found a zero relationship between chronological age and peer acceptance (3, p. 132).

EMOTIONAL EXPANSIVENESS

Peer acceptance means the acceptance of an individual by those who are in an equal situation and have similar group affiliations. But, it also implies how well the individual accepts her peers. That is to say, through measurement of peer acceptance it is also possible to obtain a measurement of emotional expansiveness; the degree to which one student is in need of other students as friends. This is determined by the number of positive choices she gives to the other girls in her cottage in excess of the negative choices given, on this scale.

The high and low groups for the five cottages were compared as to their emotional expansiveness indices for their respective groups. The indices were computed by dividing the emotional expansiveness scores of the five students by the total possible, had every girl in the high or low groups voted for every other girl in her cottage as "best friend." Table 3 shows the indices for the emotional expansiveness of the high and low groups, and the mean for all five cottages.

It is interesting to note from Table 3 that in all but one cottage, the emotional expansiveness index of the highs exceeds the index of the lows by

TABLE 3

EMOTIONAL EXPANSIVENESS INDICES FOR THE HIGHS AND LOWS IN EACH COTTAGE

Cottage Number	High Groups	Low Groups
1	.305	.01
2	.57	.335
3	.37	.145
4	.14	.15
5	.435	.28
Mean	.364	.184

at least .15. In the cottage where the low group exceeds the high group, it does so by only .01. The mean index for the high groups is twice the size of the low groups' mean index. This is rather an unusual situation, and it would not be expected to occur in a normal population, nor on the group as a whole. This data would tend to indicate that there is a close relationship between emotional expansiveness and peer acceptance of the students at the Gainesville school; but, as will be shown later in this paper, we may expect to find little or no relationship existing.

A correlation was computed using the formula $\rho = 1 - \dfrac{6\epsilon d^2}{n(n^2-1)}$ after ranking the girls in peer acceptance and emotional expansiveness. On the basis of the results of the high and low groups' indices, it was supposed that the correlation would be fairly significant. The results, however, indicate that there is no relationship existing between the acceptance by the girls' peers and their expression of emotional need of friends. The range is from a high of .10 to an inverse correlation of —.04, with all correlations having high PEs. The individual's emotional expansiveness may be greater than is indicated by this study since each student was limited in her expression of choices to the students within her own cottage. It is quite possible that some positive choices expressing emotional expansiveness would extend beyond this limited group and even beyond the confines of the closed community.

The emotional expansiveness indices of the extremes, the highest and lowest girl in each cottage, were compared to determine the differences.

In reviewing the raw data of the highest student in each cottage, it is apparent that their emotional expansiveness indices are below .50, with only one exception. One reason for such low indices may be that these individuals have most of their emotional needs met through their acceptance by their peers and they do not need to make a bid for other friends, nor do they feel

it necessary to reject others. Only one student among the highs was found to give an equal amount of positive and negative choices, giving her an emotional expansiveness index of 0.

In reviewing the low group, it seems that the students are expressing a wish for more friends and an acceptance by the highs as revealed by their emotional expansiveness indices. They are attempting to identify with the high group, and seem to express the feeling, "See, I like you, why don't you like me?" However, not all the lows have high indices. Some express a low emotional need which may be an indication of recognition of their low peer status and have used the negative choices as a means of retaliation. It would be as though they are expressing the feeling, "You're not hurting me by disliking me because I dislike you!"

LEADERSHIP ROLES AND PEER ACCEPTANCE

In a community such as is found at the Gainesville school, it is not always possible to assign leadership roles to those students who are the highest in peer acceptance and exhibit leadership ability. Certain other factors must be considered in addition. It is on these molar bases that assignments are made at this school.

There are two leaders in each cottage; one holds the position of "mayor" and the other is "judge." These officers handle the minor disciplinary cases and make a monthly report to the superintendent. The report is countersigned by the matron in charge of the cottage. While the officers are elected by the cottage membership, only those who meet the qualifications set up by the administration are eligible to be voted upon. Each girl is given a certain number of credits for good behavior, and other such deeds as warrant commendation. On the basis of these credits, the students become eligible to hold office and the final selections are left to the voting of the cottage inhabitants.

At the time of the February test, cottage 4 was without an elected mayor or judge as the former officers had been released from the school. However, two officers were appointed by the administration as "acting mayor" and "acting judge" until elections could be held. The mayor was not included in the February test, but was found to rank 111 out of 138 students tested in May. The judge ranked in the lower half of her cottage, holding 14th place. Between the two testing periods, February and May, an election was held, with a slight change in officers evident. The acting judge was elected mayor while an entirely different student was elected to the judgeship. This student was of Latin-American origin. The mayor still

held the same position in the February study but was found to rank 110 in the May study. The newly elected judge ranked 11.5 in the February study (about the middle of the cottage ranking) and 90.5 in the May test.

In two of the five cottages in the February testing, the leadership positions are held by students who have been found to be among the highs in this study. The judge in cottage 2 holds the top position in peer acceptance in her cottage while the mayor is tied for second place with a ranking of 2.5. The other cottage (3) has the judge ranking 2.5 and the mayor with a rank of 5.5 in the February test. A fourth cottage (1) ranks the judge among the highs but the mayor is beyond this category by a margin of 1; the judge ranks 4.5 and the mayor is 6th in peer acceptance.

Only one of the cottages (5) has officers who fall below the majority of students in their peer acceptance ranks. The mayor ranks in 10th place and the judge holds 21st place, which is just one rank short of being among the lows for that cottage.

In the May test, where rankings ranged from 1 to 138, we find a slightly different situation than in the test made on the individual cottages. Two of the five cottages have officers who are among the upper 20 percent in the entire school in peer acceptance; a third cottage has the mayor ranking 105 but the judge ranks 21, or among the upper 20 percent. Cottages 4 (previously cited) and 5 have officers who rank among the mid 60 percent. None of the cottages has elected an officer who can be found among the lowest 20 percent in peer acceptance in the entire school population. In 3 of the five cottages, the judge is again in a higher position in peer acceptance than is the mayor. A possible reason for this oddity is that the mayor does not handle as many disciplinary cases as does the judge and therefore need not be a "best friend" to more girls than the judge.

This data would seem to indicate that the girls at the Gainesville school do not react contrary to the wishes of the administration. Those whom the administration feels are worthy of leadership roles, because they adhere to rules and regulations of the school, appear to be the same girls who are well accepted by their peers, with only few exceptions.

CLIQUES AND NETWORKS

Almost every group has some sort of line of communication whereby information is passed along from one person to the next. We would expect to find the best line of communication existing among the "best friends" of the groups. Not everyone in the network is necessarily the best friend of every other person in that network; the only requirement seems to be

that a mutuality exist between two of the people concerned. As an example, a nework would exist between Mary, Helen, Jean and Jane if Mary and Helen were best friends, Helen and Jean were best friends, and Jean and Jane were best friends. It is not necessary that Mary even know Jean or Jane; she will receive the information because she has a mutuality with someone who knows the other two.

Moreno has shown how certain cottage networks and cliques have functioned at the Hudson, New York, school. One strong member of a clique ran away from the school, and this started a chain reaction until almost all the girls within that clique and network had also run away (2, pp. 256-258). This illustrates, too, the strong identification that exists within such groups. Each one follows after her "ideal" or "leader."

A clique differs from a network in that mutuality exists between all the members of the clique. Some cliques are closely knit groups that shun outsiders, while others will admit newcomers into their group. Cliques may have as few members as two or as many as 10 or 12; however, the more members involved in a clique, the weaker the clique will be. To extend the example cited previously to involve a clique, we only need a mutuality existing between Mary and the other girls, as well as between Helen and the others, Jane and the others, and Jean and the others.

No matter how disorganized a group is, there are certain to be a few cliques in it. Our emotions demand that we develop some attachment with someone in our environment. On this assumption it was decided to chart the various cliques and networks found at the Gainesville school in the February test, using as a basis choices of "best friend" of a mutual attachment. These sociograms will be found in Figure 1.

From a first analysis, we find that each cottage, regardless of its index of voting, has at least one student who is not involved in a clique of "best friends." They are virtually isolated from such a clique, although in no wise are they without some other attachment now shown in this analysis. In cottage 1 we find four such isolates; there is no mutuality expressed for a "best friend" choice. We find, too, what might be termed "near isolates" in that they are not directly involved in either a strong or weak clique, but they have some mutual attachment with an individual who is in one of these cliques. In addition, it is noticed that one student is involved not only in a strong clique, but has some attachment to a weak clique. It appears that the cottage is composed of two weak cliques and one strong clique.

The strong clique of cottage 1 is composed mainly of highs, although one of these girls ranks 14 in peer acceptance in this cottage. Of the isolates,
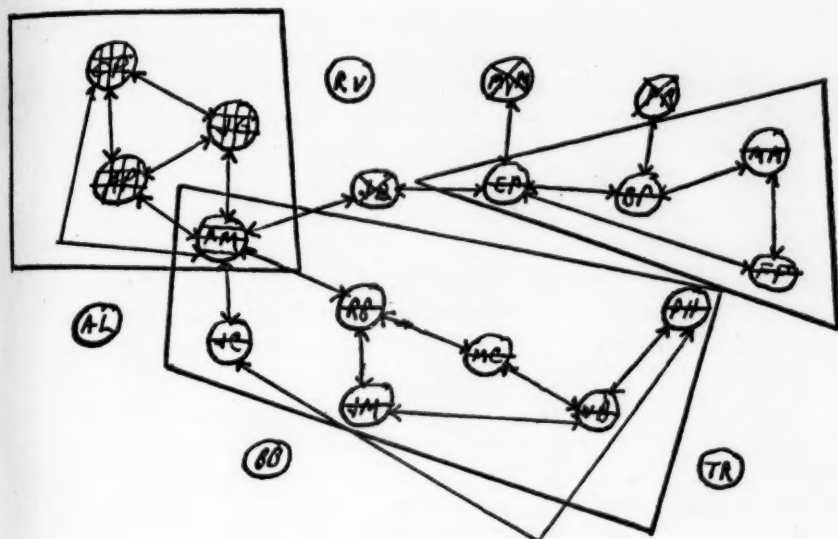
Cottage 1
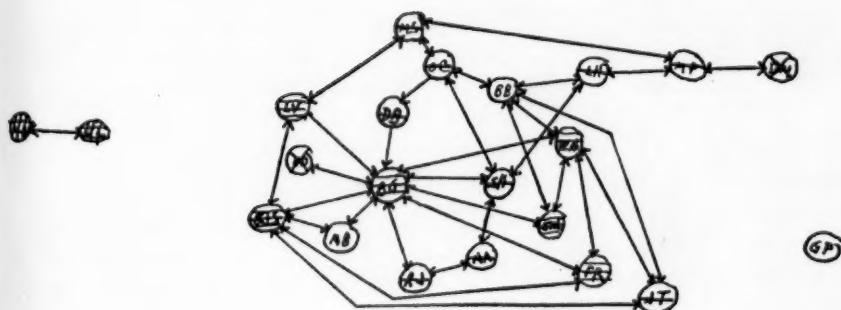
Cottage 2

Legend:

⊕ Strong Clique   ⊖ Weak Clique   ○ Isolated from Cliques

⊗ Near Isolate   ⊜ In both Strong and Weak Cliques

FIG. 1.—CLIQUES AND NETWORKS OF THE FIVE COTTAGES

Fig. 1. (*continued*)

Cottage 3
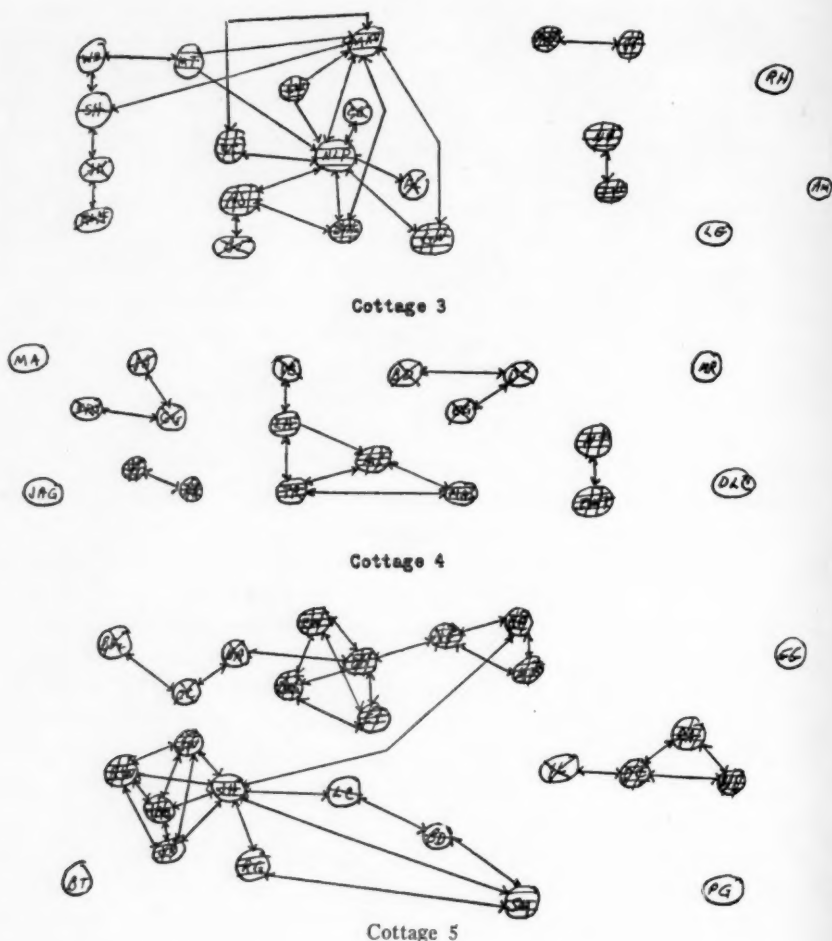
Cottage 4

Cottage 5

only two of the four girls are in the lows; the remaining two girls rank 12th and 15th in peer acceptance.

The first isolated clique appears in cottage 2. We find a strong mutual attachment existing between two students, but neither of these students has any strong attachment with any other girl in her cottage. Another feature in cottage 2 that did not exist in cottage 1 is the star effect of the network. B.G. appears to be the core of the other groups, and most of the other cliques are allied with her either through a strong or a weak clique. This

cottage also contains the least number of isolates and near isolates, with only one isolate and two near isolates. It should be noticed that the highest number of students who are involved in both strong and weak cliques exists in cottage 2. A closely knit pattern was expected after the group index was found to be the highest of the five cottages.

Cottage 3 has two isolated cliques, and, although it is not as closely knit as in cottage 2, we do find a similar star effect existing in this cottage.

Of all the five cottages, only cottage 4 shows a high degree of disintegration and disorganization in the group, although some cliques are still evident. More than half the cottage may be classified as isolates or near isolates. Only four students are involved in a clique that exceeds what might be termed an "isolated clique." Again, this type pattern was expected after the group index was found to be lower than the other four.

Cottage 5 is unique in that it possesses four comparatively strong cliques, two of which involve four or more persons. It is also differentiated in that two distinct networks can be seen, and only one student is available for contact between them. It is interesting to note that in this cottage the three girls in a strong clique isolated from the main group, and the near isolate of this clique are all in the lows for that cottage. The highs, on the other hand, can be located in either of the two main cliques.

To aid the reader in determining the various cliques, cottage 1 has been blocked out to illustrate the three cliques existing in that cottage, two of them weak cliques and one strong clique.

Summary and Conclusions

The problem of this study was to determine the relationship between certain variables and peer acceptance. It was conducted on 110 white girls under 21 years of age who are confined to the Gainesville State Training School, Gainesville, Texas, by the courts of the State of Texas. The first scale was administered during the month of February, 1950. A second scale was administered during the month of May, 1950, and the results compared with the findings of the first scale.

The students of this study were administered a sociometric scale which had been revised to suit their particular situation. The tests were scored by the use of weighted scores, and a matrix chart was prepared for each cottage in the February study, and for the school as a whole in the May study. Each girl was given the opportunity to respond negatively or positively to each other girl in her cottage in the former study, and to each other girl in the school in the latter study. The results of these choices and rejections were used as a basis for comparison with other variables.

A comparison with a similar study made in 1948 was made to note the similarities existing, if any. Group indices for the five cottages and for the entire school were computed to determine the amount of inter-personal relationships existing in the cottages and in the school as compared to what it could have been if strong mutualities existed among all the girls.

The five top girls in peer acceptance in each cottage, and the upper 20 percent in the entire school, and the five lowest girls in each cottage and the lowest 20 percent in the school were selected upon which to make a special study to see if there were any significant factors evident between the extremes. The relationships between the voting of the high groups and low groups for each other were computed by means of the critical ratio.

Positive and negative choices were studied to see if there was a greater feeling of hostility or friendliness existing among the girls. Mutual attractions and mutual rejections among the girls were also examined to find out whether or not the students were accepting the other girls in their cottage as friends or rejecting them from their social life. It was also deemed advisable to determine to what degree the Latin-American students were accepted by the North-American students. Age was related to peer acceptance in hopes of uncovering data that would prove or disprove the hypothesis that the older student was better accepted by her peers.

Statistics which would show the amount of emotional expansiveness existing among the girls in the various cottages were computed. It was believed that the girls were in need of friends and some emotional expression. A zero correlation was found between the amount of friends the student needed or emotional expansiveness, and the amount of friends she possessed or peer acceptance.

It was felt that certain leaders who were already serving the part of leader were not necessarily those who were highest in peer acceptance, in their respective cottages or in the school as a whole. The investigation led to the conclusion that the students apparently abide by the selections made by the administrative staff in appointing students for the role of leader in each cottage.

A final factor studied was the structure of the cottages in regards to mutuality in "best friend" choices. Sociograms showed the various clique and network systems existing in the five cottages, and the extent to which certain students are the stars and others do not belong at all.

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SOCIOMETRIC THEORY OF LEADERSHIP AND ISOLATION IN WHO SHALL SURVIVE?

(Comments on F. Stuart Chapin's article SOCIOMETRIC STARS AS ISOLATES*)

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Dr. Chapin's fine paper *Sociometric Stars as Isolates,* is unfortunately based on false premises. He starts with the assumption, "the convention among sociometrists has been to represent the star as a person at the center of a circle of surrounding friends" and "such a person is usually represented at the center of an admiring group of persons who claim him as their most intimate friend". Chapin took for granted that all sociometric studies draw sociograms in the same manner. Had he consulted my book *Who Shall Survive?, A New Approach to the Problem of Human Interrelations,*—and, of course, the work of many other sociometrists besides myself, his analysis would have taken a different direction. My theory of leadership and isolation in *Who Shall Survive?* differentiates particularly three types of leaders. The isolated leader, the powerful leader and the popular individual. The sociogram of the isolated leader is given on page 152, which is accompanied by the following description:

> "*Aristo-Tele of an Isolated Individual.* A. Individual A is the first and exclusive attraction of B and B is the first and exclusive attraction of A. Both individuals, B and A, make use of one choice only from the five at their disposal. Except for the one tele from B, A is fully *isolated* in the community. But B is the first choice of C, D, E, and F, who in turn are the center of attractions of 6, 8, 5, and 5 other individuals, respectively. Among these latter 24 individuals are three persons, G, H, and I. Each of them is the center of 7 attractions. The effect of the one tele from B to A is to connect A, like an invisible ruler, with a main psychological current and to enable him to reach 43 persons potentially predisposed towards him."

The sociogram of a powerful leader is presented on page 90 as follows:

> "Fig. 2. *A Powerful Individual,* LP. LP of C4 is the center of attraction from four individuals: SV and ES both of C4, MM of CA, and KM of C5. She is the first choice of these individuals as is indicated by the numeral 1 on the side of the line extending from each of them to her. She makes use of four of her five choices and appears attracted in return to SV, MM, ES, and KM, with each of whom she forms a pair.

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*See *American Journal of Sociology,* November, 1950.

Quantitatively she would be classified as an individual of average direct influence, but through SV, MM, KM, and ES she commands by indirection nearly one hundred individuals of whom fifty-nine are indicated in the chart. She has actually a powerful position in the community."

The sociogram of a *popular individual* is presented on page 89, the only type of leadership sociogram of which Chapin is aware. It emphasizes in the text under the sociogram that his influence is limited, compared with the other two forms of leadership.

As seen from these three illustrations, sociograms are always drawn in accord with the structure found. A well drawn sociogram changes in arrangement with the purpose.

Had Dr. Chapin consulted *my* sociograms of leaders, he would have found me at least in partial agreement with him. *Stars or leaders are often a kind of isolate and not a center of attractions.* I demonstrated this discovery seventeen years ago in *Who Shall Survive?* and thus confirmed Cooley's observation, to which Chapin refers. However, all findings do not limit the forms of leadership to the isolated type alone as Chapin seems to believe. There are other leadership structures as mentioned above.

BOOK REVIEW

Culture in Crisis, a Study of the Hopi Indians, by Laura Thompson, with an Introduction by John Collier. Harper and Bros., New York, 1950. $4.00.

In 1933, the United States Office of Indian Affairs inaugurated a policy for administration of the 400,000-odd Indian "wards" of this country that aroused admiration the world over. It was a large-scale, major effort by a leading world-power to help a non-industrial, mostly preliterate, people in a dependency situation liberate themselves from the condition of poverty, disease, and despair that had followed contact with white industrial civilization combined with authoritarian government control of their destiny.

The efforts took two forms. One, the Indian tribes were encouraged to incorporate themselves and to exercise the large powers of local self-government permitted by new legislation. Two, Indian Office personnel was alerted to the resources available in modern social science; administrators of reservation schools, hospitals, forests, farms, stock-ranges and other tribal enterprises, were urged to use this accumulated knowledge in their face-to-face dealings with Indian leaders and in planning programs for them.

Not content, however, with the success of these policies in increasing Indian welfare, improving health and raising morale, but convinced that more "adequate norms and instruments for implementing the principle of cultural freedom must be discovered", the responsible officials took a further step in 1941, one not often taken by a bureaucracy. They initiated a long-range, multi-discipline research project, of which Dr. Thompson, the author of this book, was made Co-ordinator, jointly sponsored by the Office of Indian Affairs and the Committee on Human Development of the University of Chicago. (In later stages, the Society for Applied Anthropology succeeded the University Committee as co-sponsor.) The aim of this project was to discover by scientific inquiry norms and instruments adequate for nurturing and cultivating local responsibility and enlightened cultural freedom in each of the thousands of small communities into which our Indian population is grouped.

Reports of this project, which continued for almost ten years, are being gradually released in a series of monographs and books, of which *Culture in Crisis* is the latest to come from the press. The complete file of these publications will undoubtedly constitute a monumental landmark in the movement of university-trained Americans to make social science research

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the basis for government policy. Volumes so far offered contain a wealth of information on personality development, acculturation processes, and the interrelationships between the ecological, sociological, technological, psychological, and symbolic aspects of the five Indian cultures studied exhaustively by a battery of more than fifty social scientists from different disciplines.

The particular book under review, discussing in detail studies of five villages and generalizations drawn from the data, will be of special interest to students of sociometry and allied fields of psychodrama, group psychotherapy, and value-systems.

The Hopi tribe numbers some 4000 individuals who live in an arid environment so inimical to survival that no leeway whatever is permitted for radical departures from the traditional ways of life that have insured the tribe's survival for some 1500 years.

In this, it is in marked contrast to our own cultural situation, in which individual innovation and opposition to established ways of doing things have been raised almost to virtues, in which rapid change is assumed to be inevitable and mostly a positive good. With us, questioning the wisdom of departure from the works and values of preceding generations is labelled "reactionary", and the term is one of strong opprobrium. But the Hopi system of social control must be complete if the tribe is to survive and each member must be compelled to follow "The Hopi Way." Each individual must be made to desire to abide by this Way; social control must be so internalized as to become the individual's own motivation. From our standpoint, life in such a situation would seem to be intolerable, "rude, nasty, brutish and short."

Nothing could be further from the truth, as the data marshalled by Miss Thompson show. Life in Hopiland is warm, full of drama, spiritual meaning, and deep personal satisfaction, however physically arduous and toilsome. How is this achievement, almost a miraculous one, attained? The author contends that it comes about because the Hopis have a profound, intuitive understanding of the type of spontaneity defined by Moreno as "the state of readiness for any task." The Hopi value-system stresses the urgency of dramatic response to all traditional forms of behavior. "The accent . . . is on *intensity of participation* in a prescribed formula. . . . This spontaneity form has been built into the center of the traditional life-way. . . . It has tended not only to energize and unify the individual personality but also to nucleate and vitalize culture into an integrated whole . . . closely dovetailed with the geographic setting" (p. 100). Hopi culture is wholly

one of conserves, conserves of proven utility over a period of a thousand years. But the individual's thought and feeling activate these conserves and stereotypes by dramatic response. So he escapes regimentation and dead-level monotony in his emotional and spiritual life.

The imperative thus to enrich and ennoble existence derives directly from Hopi philosophy. As the author puts it:

"Orthodox Hopi believe not only that man can positively affect the functioning of the world of nature, but that in the measure he fails to do so, its harmonious functioning will be impaired. . . . To be effective, man must participate . . . not . . . by performing certain rites by rote in certain ways at prescribed intervals. On the contrary, he must reactivate the rites creatively, giving them ever-renewed vitality and significance. . . . He must relive them spontaneously with emotions, thoughts, prayers, and will. . . . In the Hopi language, the word for 'to pray' also denotes 'to will, to wish, to want'. . . . The individual's success in life, the welfare of the group, the harmonious functioning of the world of nature hinge on man's carrying out his role wholeheartedly and with an effort of the emotions, mind and will. The world image is . . . a harmonious, integrated system functioning rhythmically according to the principle of immanent justice and in it the key role is played by man" (pp. 134-5).

That the relationship between Hopi philosophy and the Hopi Way (the term covers the multitudinous minute prescriptions comprising technological, psychological, sociological and symbolic patterns of behavior which the individual is expected to follow) is organic and not accidental or fortuitous, is one of the main scientific discoveries claimed for this research project. Study of the findings relating to personality development, ceremonies, child-care, economic practices, language, social organization, handicraft design, and world-view, made the conclusion inescapable that all are parts of a dynamic logico-aesthetic unity.

The data suggest that although socially organized human groups tend in course of time to integrate themselves organically with the total environment, their cultures are *not*, as Marx contended, economically determined. On the contrary, a culture is determined by human logic and the human potential to create and integrate complex symbol systems. Dr. Thompson lays great stress on the conclusion that *"we may expect to find in the symbol system of a culture group a key to what is essentially human about the group, its culture and personality"* (p. 177). (Italics mine.) This is a re-statement of a truth about human society that was held to be axiomatic for ages, but modern social science has tended, if not to deny it, to ignore it;

and the many separate studies of one facet or another of a culture or society by specialists working independently have done nothing to counteract this tendency. This book offers the first instance of scientific validation of this axiom in modern times. Dr. Thompson emphasizes that such a conclusion could emerge only from multidiscipline research in which different specialities of social science are utilized cooperatively, both in the collection of data and in their interpretation.

The reader is no doubt asking, "But what of the *crisis* that gives the book its title?" It is an obvious corollary of the proposition noted above—namely, that a culture is a dynamic unity whose essential parts are organically interrelated, that a crisis would be precipitated if a radical change were induced in any one of the constituent parts of a culture, because this inevitably would change the dynamic interrelationship between the parts. It is not the introduction of alien traits *per se* that induces a crisis, but whether or not the key symbol system is affected by such traits. If it is, the strain is eventually felt throughout the culture and disintegration ensues, with collapse of the conditions that foster its particular type of personality and discipline.

This being true, it becomes self-evident that a government bureau charged with responsibility for the welfare of any community must move with the most extreme caution if well-intentioned policies are not to precipitate or aggravate culture crisis and thus harm irrevocably the human groups subject to its jurisdiction. Dr. Thompson states that the findings of this research suggest that the culture structure of a community in its geographic environment sets the administrative problem of that community where its welfare is concerned. In other words, before planning is done by a government bureau, officials must know enough about the essential parts of a culture and their interrelationships to enable them to work within those relationships so as not to disturb the dynamic equilibrium. This is a large order. Dr. Thompson provides a long list of recommendations for government plus community action-research in conformity to this principle and thus indicates she regards such a conception of government responsibility as practicable. Readers may differ with the author on his point. It can be said, however, that she has brilliantly expounded how a government *should* work for a community's welfare. If it can not be done that way, it had best not be done at all.

Every social scientist connected with, or contemplating, government service should read this book, for—as John Collier states in his stimulating Introduction—its implications extend far beyond the concerns of the Office

of Indian Affairs. *Culture in Crisis* is a major contribution to our under-
standing of the complex nature of the problems confronting government in
the modern "Welfare State."

MARIA ROGERS
Committee on Autonomous Groups

New York City

AMERICAN SOCIETY OF GROUP PSYCHOTHERAPY
AND PSYCHODRAMA

BULLETIN No. 11, MAY, 1951

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